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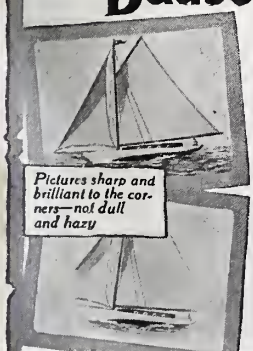

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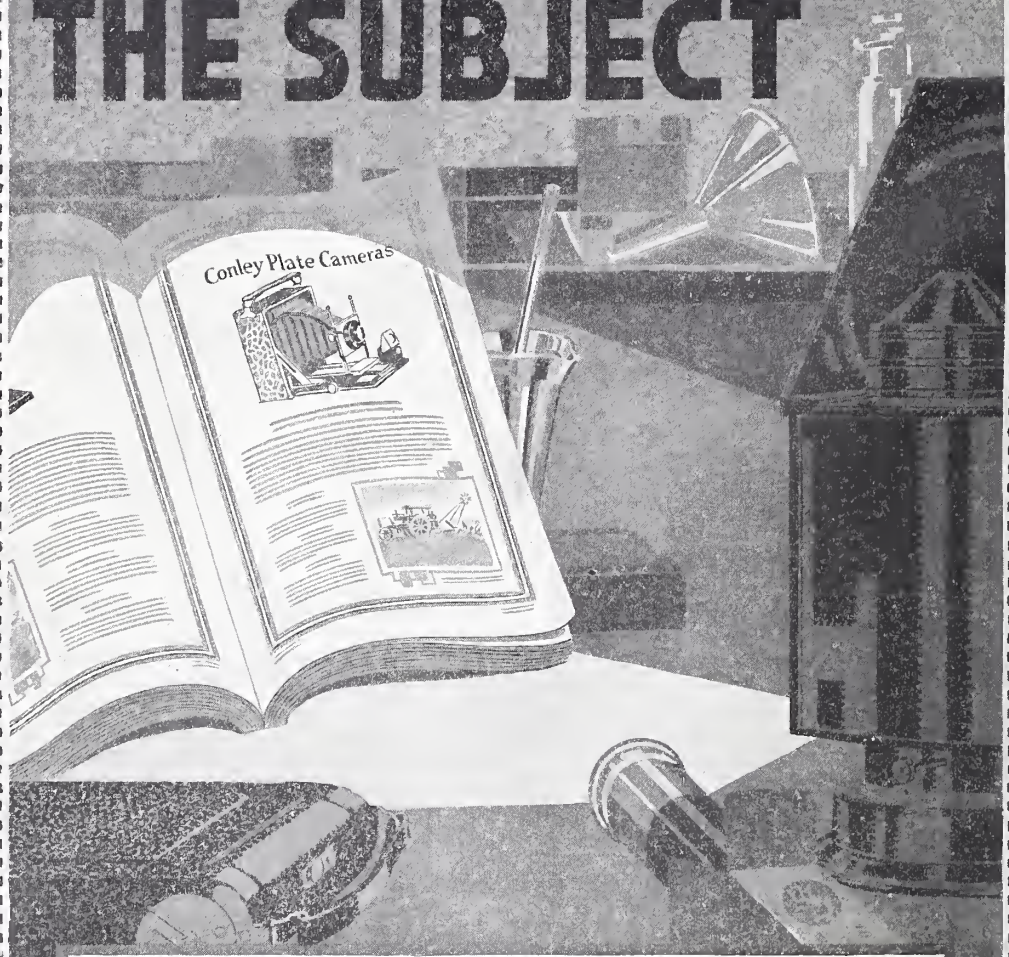

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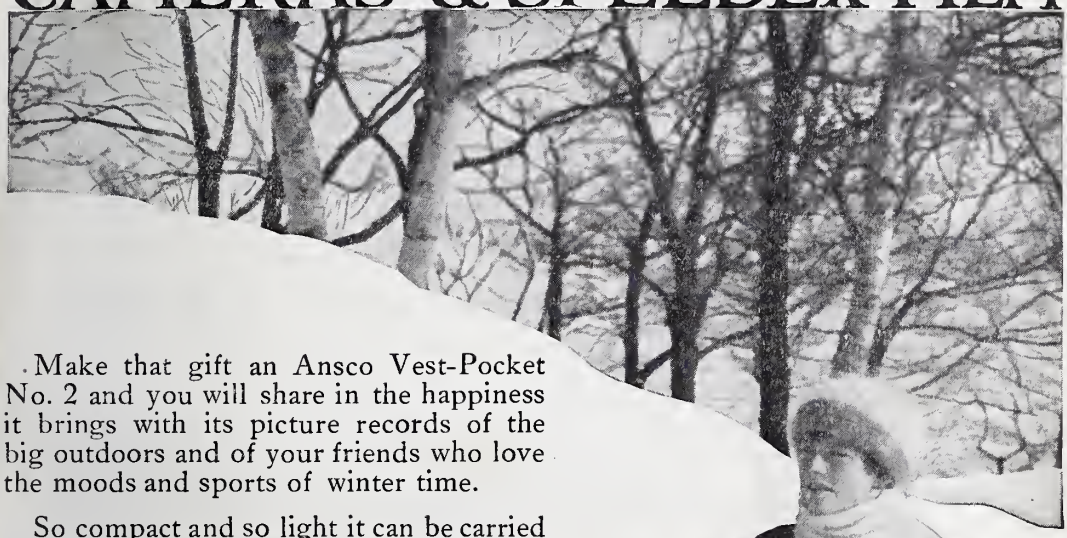

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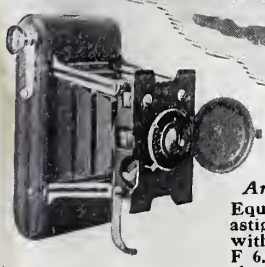

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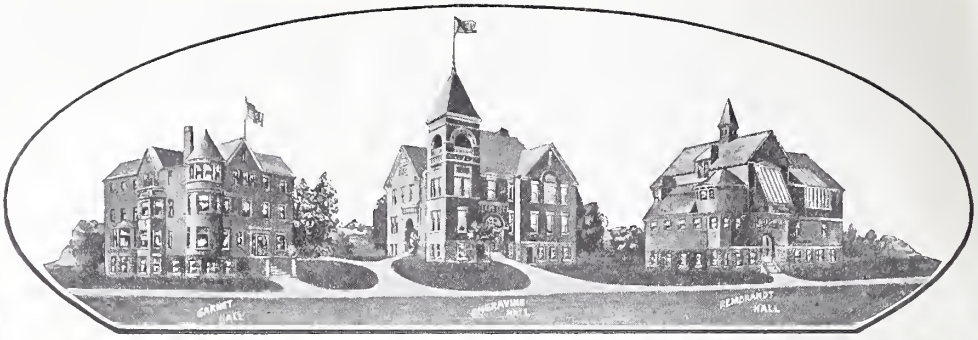

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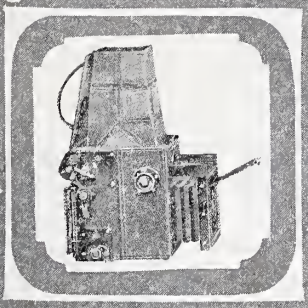

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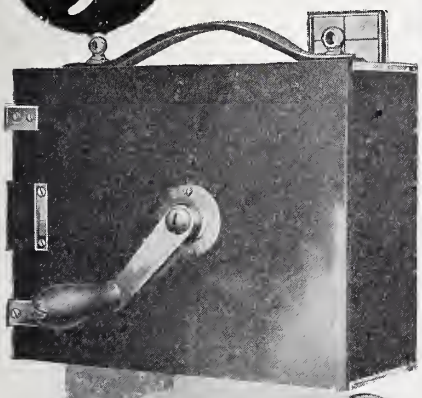

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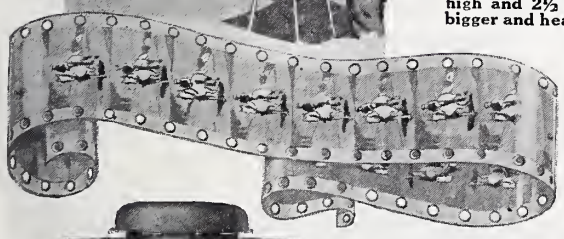

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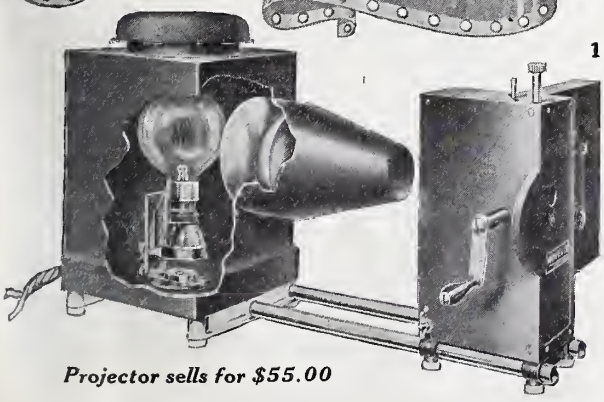

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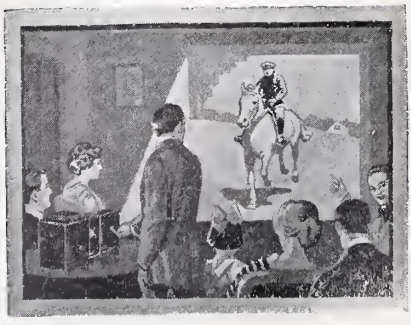

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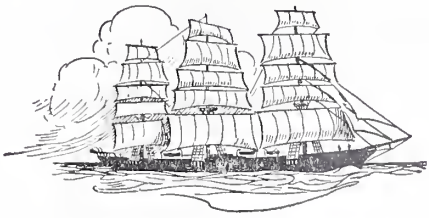

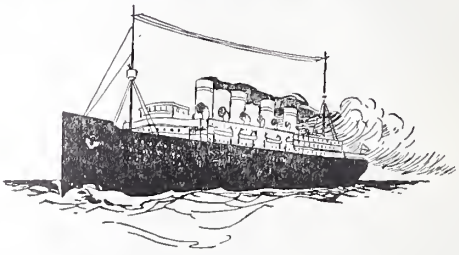

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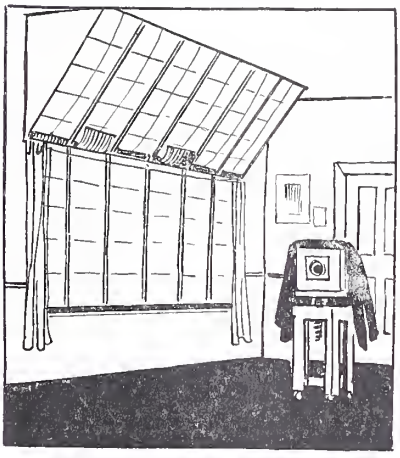

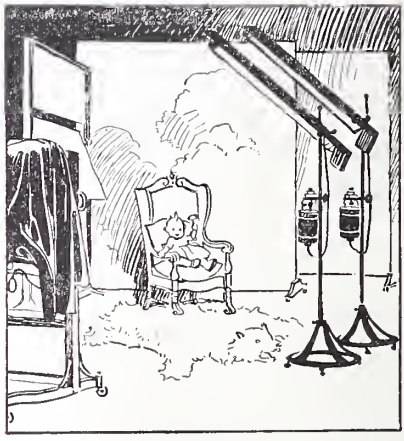

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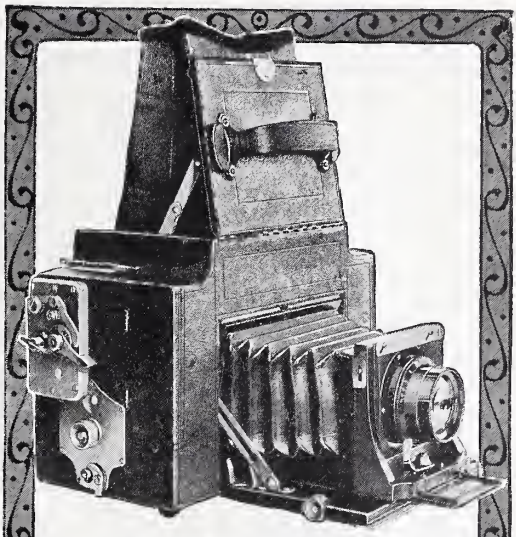
January 16, 1917.

President



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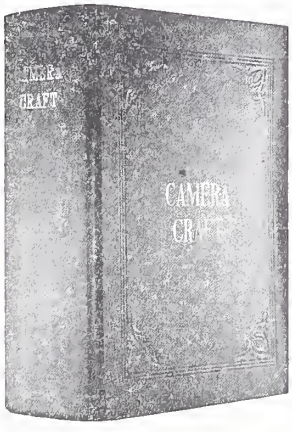

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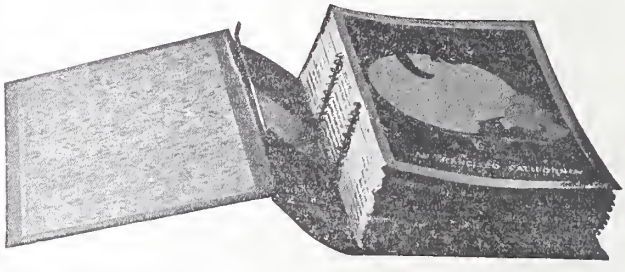

market only a few months ago it has already been adopted by such leading publications as Cosmopolitan, Ladies' Home Journal, Good Housekeeping and hundreds of others. This binder is finished in book cloth with **Camera Craft** stamped in gold on front cover and back. It is equipped with a patented device for binding twelve copies of Camera Craft together in a single volume, having the appearance of a regular bound book. It is strong in construction and so simple in operation that the filing or extraction of one or more magazines requires but a few seconds. No punching of holes is necessary—just a slit between the pages with a pen knife, the insertion of a metal clip, and the magazine is ready to be dropped into place over the binding rods, which are swung back and, with a slight turn of the wrist, securely locked to the solid wood back. The back is not flexible and there is no chance for the magazine to work loose or uneven. We supply them at **$1.00 each, postpaid.**

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A Photographic Monthly

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CAMERA CRAFT

A PHOTOGRAPHIC MONTHLY

FAYETTE J. CLUTE, Editor

CLAUS SPRECKELS BLDG. SAN FRANCISCO CALIFORNIA

VOL. XXIV FEBRUARY, 1917 No. 2

Exposure and Exposure Meters

By Dr. S. Brum Do Canto

With Illustrations by the Author

In order that the latent photographic image, whatever be its nature, may, after development, exactly reproduce the gradations from high light to shadow of the object photographed, full or correct exposure of the sensitive surface is required. Light reflected from the object must act for the proper period in order to give a correct representation. This is an axiom that no one can ignore if he would produce good photographs.

In order that one may resolve the problem of exposure it is necessary, as is known, to take account of three essential factors: The rapidity of the plate, the opening of the objective, and the strength of the light illuminating the subject to be reproduced. The first two can be easily determined. The sensitometers of Warnerke, Scheiner, Hurter & Driffield, Wynne, Watkins and others, provide a classification of plates and films according to their relative rapidities, and all are familiar with the law of inverse squares that govern the relationship between the several lens openings. The determination of the third factor introduces the one great stumbling block because we cannot determine the photographic value of light by the eye alone, although some may affirm to the contrary.

In all lights, both natural and artificial, there are, in effect, two qualities to be considered, namely, intensity or clearness, which acts on the eye and by means of which we see; and, actinicity of light power, which is the quality producing physico-chemical change, an effect particularly important in the case of the photographic image. Even were these different qualities always equal or even had they a definite relationship, one to the other, and we could base

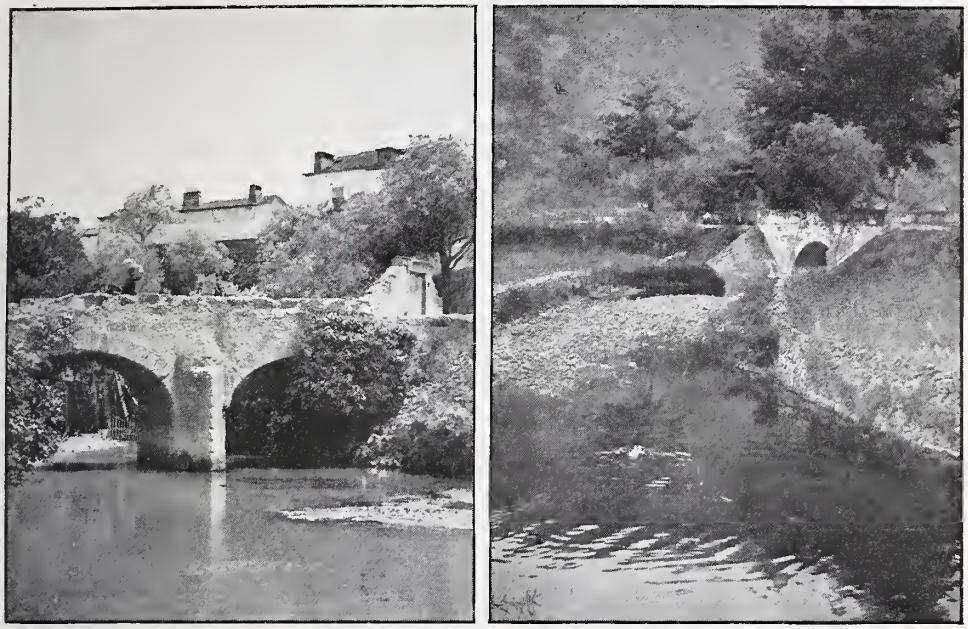
our determination of correct exposure upon the intensity of the light, we would still be quite unable to depend upon the unaided human vision. This has long been demonstrated by the photometer, an instrument measuring the intensity of various forms of light.

Quoting from "Illumination" by Trotter: "One of the difficulties of this subject is that the use of light and illumination is to satisfy the eye, and the eye is a very poor judge of the physical quantities in question. It is known that even experts cannot make a tolerable estimate of the candle power of a lamp by merely looking at it when alight. * * * Comparative estimates are not much better. It is easy to see that a twelve candle-power gives less light than a sixteen candle-power lamp, but it is very difficult to say how much less.

GOOD NIGHT, MOTHER

"It is difficult to make a quantitative measurement of our sensations. * * * The attempt to apply measurement to sensations of smell has not met with success, and, in spite of the delicacy with which different sensations of taste may be discriminated, it not only seems impossible to measure taste, but there appears to be physiological reasons for a rapid approach to a saturated condition of the sensation. A similar difficulty arises in the action of the light on the eye."

Quoting from "Photometrical Measurements" by Stein: "Thus no one can depend upon the eye to compare the intensity of one light source with that of another. A much greater complication is introduced when the change of the sensation with respect to the variation of the exciting light source is considered. This subject has been investigated by exhaustive experiments by Fechner, Weber, Helmholtz and others; and, though a law rigidly adhered to has not been discovered, yet the intensity of normal sensations has been found to follow somewhat closely a relation known as Fechner's law. The simplest statement of this law is that the differences in sensations vary as the logarithm of the ratio of the stimuli producing the differing sensations. If the strength of the sensation was directly proportional to the excitation, a light A, which is



TWO TYPICAL SCENES IN PORTUGAL

twice as strong as a similar light B, would produce a sensation a=2b, and the mind could in the general, form fairly accurate judgments of the relative intensities of light. But, the actual relation between the strength of the sensation and its stimulus being so complex, the resulting judgment is confused, and comparisons of the intensity of illumination by the unaided eye are unreliable."

A WATERWAY IN PORTUGAL

This points out the lack of memory of sensations and particularly of luminous sensations and eye fatigue, while the Purkinje effect, the anomaly of vision, still further complicates. We must deal with an uncertain degree of appreciation of light reflected and diffused from various surfaces, but with the facility of accommodation of human vision to illumination of diverse intensities, as a very simple example will illustrate: In an apartment, rightly illuminated as during the middle of a June day, we see all objects very clearly; but as

ALMOURAL CASTLE—PORTUGAL

evening comes on with its diminution of the light, our vision gradually accommodates itself thereto, until at last we see all objects quite clearly with the apartment illuminated simply by a single electric bulb of forty candle-power. Every photographer knows quite well how perfectly the vision accommodates itself, in about half an hour, to the feeble unactinic light of the dark-room. But the problem of visual valuation of the light factor in the determination of exposure becomes still more complex when one considers that the actinicity or photographic power of the light differs enormously from its visual brilliancy. To give some idea of the difference that may exist it has been found that, taking as a standard the Heffner candle, the light of which is equal in actinicity and brilliancy, we find that while five centigrams of magnesium has an illuminating power of only eighty candles, it has an actinic or photographic power of one thousand six hundred and twenty-eight candles. It is quite evident that, in determining exposure, we cannot trust our eyes to estimate the actinic value of the light.

Exposure tables, as we all know, afford a rather rudimentary and imperfect solution of the problem of correct exposure. Quite frequently they approach the truth only for the particular latitude for which they have been calculated and they are often rather complex and tiresome, while the personal element influences

the result to no small degree. Using the words "open sky", "dark interior", "under trees" and so on, involves a lack of precision easily responsible for very grave errors.

The only perfect solution of the problem is afforded by the actinometer or exposure meter, a small apparatus which, when properly designed, indicates with sufficient precision the exposure time, taking always into consideration the three factors; rapidity of plate or film, size of diaphragm and actinicity of the light. Of these there are two fundamentally different types: One relying upon direct vision and another using sensitized paper. To the first belong the Heyde and others that employ the blue filters having progressive degrees of density, the apparatus being so constructed that as one views the subject through a sight or slit a movable blue filter progressively obscures the view until it becomes invisible. Graduated scales then show, either directly or by means of a more or less simple calculation, the exposure time for any given plate speed and diaphragm number. With these the determination of the photographic values of the light is based upon its brilliancy or intensity, which last we have shown differs greatly from its actinicity.

MADAM B. R. L.

To cite an example, an exposure meter of this type will indicate a rather short exposure for an interior illuminated solely by incandescent gas, which in all likelihood an hour's exposure might not suffice. Furthermore, this form confides its determination of light value to the human eye, the sensibility of which varies with the individual, and even in the same individual, as already demonstrated. Furthermore, such meters not infrequently furnish diverse indications in the hands of different individuals, and even in the hands of the same individual on different occasions. As an experiment, take one of these meters and, looking through it at some open air subject, the indicated exposure will at first be found considerable less than is the case after three or four minutes examination. This because the retina of the eye gradually accommodates itself to

the more or less feeble monochromatic light that traverses the colored filter, the more so as the blue coloration favors visibility under very weak light.

Exposure meters using sensitive paper base their determination upon the time required by such paper in darkening to correspond to a given standard tint or color. This "actinometer time", in connection with a scale, gives the exposures required. While this type of meter gives very good results, it is important that the exact moment at which the sensitive paper attains the standard tint be recognized. This demands that the former, as it changes by being exposed to the light, comes to the same color as well as depth of tone as the latter, the standard tint; a comparison of two tones of different color being practically impossible, particularly with one of them constantly increasing in intensity. This identity of color being seemingly unobtainable, an approach to this condition obtained by interposing slightly blue tinted glass, as in the Watkin's Meter, is accepted.

An exposure meter, to be serviceable, should measure the actinometric value of the light illuminating the subject. The theory that it is the light reflected from the subject that should be measured, is a false one. Alfred Watkins says: "I have tested it in this way: Two plaster casts were taken, one white, the other a dark brown. The light reflected from each was carefully tested by an actinometer under equal circumstances, all extraneous light being screened off. Plates were then exposed for times proportional to the actinometer times. As I expected the two negatives were identical in density and would, if printed, give false ideas of the difference between the white and brown casts." Furthermore, the results of the meter tests should not be influenced by any light other than that acting within the angle of the lens, a requirement the Watkins meter fulfils quite well, making it one of the best of its type. I would, however, offer a few suggestions covering its employment.

With all meters of this type, the user in southern countries, should, for certain subjects, divide the indicated exposure time by a given factor. Some subjects requiring the full indicated or standard exposure time and these are: Portraits and groups made in a studio, and interiors and very deep forest scenes or views, these having the same conditions and aspects as they present in England. A street scene, a portrait in the open air, or a landscape may also take the meter time as the correct exposure, but one must remember that in England and other northern countries, the facades of the buildings are generally dull, the green of the trees pronounced, the soil quite dark, and the sky far from brilliant, while in Portugal, Spain, Italy, and other southern countries, the tonality of these subjects is often much higher, and the sky reflects a more actinic light, so that frequently an exposure only one-half that indicated by the meter is required.

After making a series of methodical experiments, I have arranged the different subjects considered in four classes. The first, requiring one-half indicated time, includes landscapes with foreground, street scenes, portraits and groups out of doors, and like open air scenes. The second class, in which the meter time is to be divided by four, comprises light colored objects, open landscapes and lake or water scenes. Sea views with shipping, snow scenes, white, or white and black objects, make up the third class calling for a division by six, while

THE WATER MILL—PORTUGAL

A WAYSIDE FOUNTAIN

the indicated exposure for sky and sea combinations, or sky alone, call for a division by fifteen. These latter exposures are often so short that the meter time can be conveniently measured only by interposing a colored screen over the meter opening and this necessitates a determination of the former's coefficient. The yellow screen that I employ has a coefficient of five times, this being used whenever the meter time falls below four seconds.

One should also bear in mind that the sensitive paper, while enclosed within the meter, will often retain its full sensitiveness for a year or over, should be secured from a reliable dealer or direct from the manufacturer at periods not too widely separated. The standard color slip should also be renewed from time to time, as it changes somewhat with age. Furthermore, the special color plate meter should be employed for both panchromatic and color plates; and when used for open air subjects in southern countries, its indicated exposure time should be reduced one-third.

In closing I would emphasize the fact that even the best exposure meters do not absolutely resolve the problem of exposure time. Even with a full understanding of the use of an exposure meter, one cannot be sure of absolutely correct exposure in each and every case; but rightly used, it will reduce the amount of error to a point well within the limit of tolerance of a good plate or film.

LIGHT CONTROLLED—Using a Series V, No. 3, Bausch & Lomb Zeiss lens, stop U. S. 128, and a Seed Non-Halation Ortho plate, an exposure of twelve minutes was given. Developed in Formosulphite-Pyro, forty-five minutes at sixty-five degrees Fahrenheit.

Photographing Interiors

By Charles Erwin Arnold

With Illustrations by the Author

It is acknowledged that interiors, the interiors of rooms, offices and the like, are extremely difficult subjects to handle successfully, and this is perhaps the reason why the demand for work of this kind is not greater. The average commercial photographer does not particularly encourage this line of business and he too frequently permits himself to offer his customer work that can hardly be satisfactory. Interiors, rightly handled, make very interesting pictures; and, properly made, they are greatly appreciated by the customers for whom they are produced. I have frequently been engaged to photograph one or two of the rooms in a home or building and then, as the prints were delivered, received an order to photograph all or a good part of the other rooms on condition that the results be of equally good character. Not infrequently I have been given orders for one or more albums made up of views of every room in a house, these resulting from the satisfactory outcome of an order for a picture of a single room. In many other instances I have received good orders from people who have been shown examples of my work made in

WINDOW ILLUMINATION CONTROLLED—Using a Series IV, No. 5, Bausch & Lomb Zeiss lens, stop U. S. 128 and a Seed Non-Halation Ortho plate, an exposure of two hours and fifteen minutes was given to accommodate the shadows. Developed in tank with Formosulphite-Pyro, one hour at sixty degrees Fahrenheit.

the home or office of some acquaintance, all this showing that quite a nice business can be done in this line if the photographer will only give it the care and attention necessary to turn out pictures that lack the too common grotesque character and soot-and-whitewash quality of much that passes for interior photography.

In my interior work I depend practically entirely upon daylight as an illuminant, using flashlight only when life must be depicted, as is often the case with pictures intended for illustrating or advertising purposes. Flashlight has its advantages, but it is, to my mind, unsuited to the portrayal of an interior for the simple reason that the lighting effect secured is not that natural to the room and it does not give the windows and the open doors into other rooms their natural and logical appearance. True, using a flash does much to simplify matters, but while the result may not seem particularly unsatisfactory to the photographer who has seen the room only once, the customer, more familiar therewith, perhaps hardly recognizes the scene when the lighting is from a point practically opposite that from which it normally comes and the parts of the room generally in shadow are shown as the best lighted and most noticeable. We can, by only a moment's thought, recall how strange some room with which we are quite familiar looks when seen for the first time illuminated by perhaps a large chandelier near the center instead of the natural light coming in through the windows.

Using daylight and a long exposure one is in a position to do almost anything he may wish in the matter of evening up the exposure, particularly if there are a number of doors and windows through which the light enters. It all becomes a matter of a little judgment as to how long each such opening should be allowed to furnish its share of the light used. A window back or well to one side of the camera may be allowed to remain unobscured during the entire exposure. One coming within the view may be best covered during one-half the exposure, perhaps for a greater or lesser period. It is obvious that if it be covered for too great a part of the total exposure a false effect, somewhat akin to that resulting from a flash from behind the camera, would result. If the principal light of a room enter through a large window in front of the camera, that light should be allowed to dominate the lesser lights that other windows afford. The obscuring of a window in front of the camera can be carried to such a point that the view outside shows plainly in the picture; and, when this can be done without falsifying the lighting, it adds much to the interest of the picture, adds much to its charm. Frequently the sash of such windows become obscured in halation, or would so become were not control exercised in developing, when the necessary amount of light is allowed to enter through them. The proper procedure is to so regulate the time they are allowed to remain uncovered so that the proper lighting effect is secured and then; if overexposure of the window itself results, use such control as may be possible in development.

The above indicates clearly two forms of control, that of covering or darkening windows or doors for a portion of the exposure time and that of holding back development of brilliantly lighted areas in making the negative. The first

AN EASY SUBJECT—Using a Series V, No. 3, Bausch & Lomb Zeiss lens, stop U. S. 64 and a Seed Non-Halation Ortho plate, an exposure of fifteen minutes was given. Developed in tank with Formosulphite-Pyro, forty-five minutes at sixty-five degrees Fahrenheit.

LIGHTING CONTROLLED—Using a Series V, No. 5, Bausch & Lomb Zeiss lens, stop U. S. 64 and a Seed Non-Halation Ortho plate, seven minutes exposure was given. Developed in Formosulphite-Pyro, in tank, forty-five minutes at sixty-five degrees Fahrenheit.

I generally achieve by using some large sheets of stiff binder's board that have been either painted black or covered on one side with black cloth. Each sheet is provided with a slot about one-fourth inch wide extending from the center to within a few inches of one side. By overlapping the slotted sides of two of these sheets and passing a winged nut bolt through the slot, one is provided with an adjustable "blind" that can be arranged to fit any window or door much as do the adjustable window screens in the market. Of course, two or more sets of these slotted screens are required to fill a window, depending upon its height. A door is made blind in the same way. By slightly springing the cardboards before finally tightening up the screw in the slot, enough pressure can be secured against the sides of the window or door casing to hold them in place. As light will enter through the slots where they come opposite each other, it is best to glue a strip of cloth along each side of these openings to cover them without impeding the action of the bolt that holds each pair of "blinds" in the proper position to fill the space being darkened. Where the window is easily accessible from the outside, large sheets made out of a good close texture but thin black cloth can easily be pinned around the outer casing in such a way that a slight quick pull at one corner will bring them down when light is to be admitted.

Control in development is, I find, mainly a matter of denying the overexposed portions sufficient reducer to allow of their becoming blocked up before the detail in the poorly lighted portions are brought out. It is obvious that tray development with the constant bringing, by the rocking of the tray, of a new portion of the developer into action over every part of the plate, defeats this end. The portrait films which I find, have wonderful semi-orthochromatic qualities combined with the power of overcoming halation of windows and the like as perfectly as do non-halation plates. The formula I employ most generally is used extensively by French, Swiss and German workers along similar lines. This formula for a non-alkaline developer originated in the fertile brain of a Lumiere in co-operation with Dr. Schmidth whose famous laboratories of research and scientific photography at Kusnacht near Zurich, Switzerland, I had the pleasure of visiting some fifteen years ago, through the courtesy of the Swiss aeronaut and originator of the balloon camera, Mon Spelterini.

As I have modified it and using the metric system for convenience in compounding, the formula calls for seven grams of pyro dissolved in about two hundred and fifty cubic centimeters of hot water, sixty grams of Lumiere's formosulphite dissolved in another like amount of hot water, with five cubic centimeters of a ten per cent solution of potassium bromide added for clear edges. These two solutions I pour into my 8x10 plate tank, holding two and one-fourth gallons, and fill up with water, taking care to see that the temperature of the developer stands at sixty-five degrees Fahrenheit. Develop from forty-five minutes to one hour, according to density required for papers used. This method of developing gives one a great latitude in overcoming overexposure in the high-lights, and helps to maintain the effect of uniform lighting, and gives a great working scope in assimilation of various color schemes of furniture and interior decorations.

WINDOW ILLUMINATION CONTROLLED—Using a Series V, No. 5, Bausch & Lomb Zeiss lens with color screen and Seed Non-Halation Ortho plate, an exposure of ten minutes was given to assimilate the strong lights and deep shadows. Developed in Formosulphite-Pyro, in tank, forty-five minutes at sixty-five degrees Fahrenheit.

WINDOW ILLUMINATION CONTROLLED—Using a Series IV, No. 5, Bausch & Lomb Zeiss lens and a Seed Non-Halation Ortho plate, an exposure of two hours and twenty minutes was given because of weak light. Developed in Formosulphite-Pyro, in tank, for forty-five minutes at sixty-five degrees Fahrenheit.

Formosulphite, used to replace both preservative and alkali in this developer, has the advantage of perfect keeping quality, both in powder form and in solution, while softening of the film and other troubles attending the use of caustic alkalies are avoided. A little oxalic acid can be added to the pyro solution if one desire to use this developer in the form of a stock solution. For the convenience of those so desiring and those other workers who do not use the metric system, the formula is given in the more common form below:

A:	Water, hot	16 ounces
	Pyro	1 ounce
	Oxalic acid	15 grains
B:	Water	16 ounces
	Formosulphite	4 ounces
C:	Potassium bromide solution	10 per cent

For about one hour tank development at sixty-five degrees, take four ounces of A, eight ounces of B, and two drams of C, adding water to make up to two and one-fourth gallons or nine quarts, the contents of an 8x10 Eastman plate developing tank. For tray development take two ounces of A, two ounces of B, eight ounces of water, and a few drops of bromide solution. The developing factor is six.

The matter of a uniform lighting that still maintains the natural light effect of the room having consideration, the next point is that of good color values. I always use an orthochromatic plate and frequently fortify them by using a backing preparation when the non-halation kind are not employed. Seed's Panchromatic, Seed's Ortho and Seed's Non-Halation Ortho plates are used exclusively. In addition I sometimes use a color filter, either a light or medium one as the case seems to demand. The ortho emulsion will take care of ordinary color contrasts, particularly where warm tones prevail, but occasionally one will meet with a case in which blues form an important part of the color scheme and to prevent these last from being lost, a ray screen is required. With the lighting properly controlled, with full exposure assured, and with tone values preserved, good work only requires a little judgment in the matter of selecting the right viewpoint and avoiding the inclusion of unnecessary furniture or the like so close to the camera that it appears distorted or, what is equally objectionable, cut off abruptly so that no support is shown.

Correct exposure is not near so difficult as one might imagine, it being mainly a matter of giving enough time. If one will go over his past experience in this line and try to recall an instance in which too much exposure was given he will realize that there is little danger in that respect. About all that is necessary is to be sure and give plenty of time; of course using judgment in the matter. I do not wish to imply that any exposure will be right, just so it is not too short, but I would call attention to the fact that the latitude is much greater in this class of work than in the usual run of commercial photography.

Point of view is all important. A well handled interior gives the beholder a feeling akin to that of standing within the room pictured; a poorly handled one appears as would the scene were it examined from without through an opening in the wall. In one case the beholder is satisfied with what is included,

LIGHT CONTROLLED—Using a Series V, No. 3, Bausch & Lomb Zeiss lens, stop U. S. 128 and a Seed Non-Halation Ortho plate, an exposure of fifteen minutes was given. Developed in Formosulphite-Pyro, forty-five minutes at sixty-five degrees Fahrenheit.

LIGHT FROM FRONT ONLY—Using a Series V, No. 3, Bausch & Lomb Zeiss lens, stop U. S. 128 and a Wratten & Wainright Panchromatic plate, backed, an exposure of forty-five minutes was given. Developed in Formosulphite-Pyro, in tank, forty-five minutes at sixty-five degrees Fahrenheit.

in the other, the feeling is one of being denied, of being offended by portions of heavy articles of furniture that his eyes instinctively try to furnish with a support. So important is this matter that I would hesitate to photograph any interior without being supplied with a battery of lenses that would permit me to select the point of view that I desired and then use a lens of such focal length as would give me what I wanted from that particular point.

Of course, it is not always possible to get exactly where one would wish in the matter of either distance or the direction in which the camera is pointed, but it must be remembered that one can at least place the camera on the exact spot from which the room is most frequently viewed by those visiting it, is at least always available, and of course a selection of lenses will permit the worker to include all that the beholder could see from that point without turning his head, if that is desirable. On the other hand, truth to subject makes it advisable to use as long a focal length as is allowable consistent with a satisfactory portrayal of the main or characteristic features of the room. I might add that while the position from which the room is generally entered may give the most familiar aspect, one permitting a vista into another room, onto a balcony, or through a window, sometimes is more advisable. True, such a viewpoint may not be the one the visitor first encounters but it may be the one with which he is more impressed than with the other, it may perhaps tell a more complete story concerning the room being pictured.

I recognize fully that it will be practically impossible for the reader to attempt to fit the data given concerning the several pictures sent herewith, to parallel cases, or to use these examples as guides in his own work, but giving this data will perhaps give a suggestion as to my general plan of working. These pictures, shown herewith, are not selected with the idea of showing either pretentious furnishings or artistic compositions. They are submitted as good examples of what can be achieved in the way of pleasing, natural portrayals of interiors, pictures such as meet with the approval of those who have use for and an interest in, work along this line of commercial photography. I think the average photographer will agree with me that nearly all of them present difficulties that would result in unsatisfactory results under the too frequently followed plan of setting up the camera, giving an estimated exposure and accepting what the straight development of the plate might give. One will notice that the shadows fall naturally, that there are no dark corners lacking detail, and there is no distracting blurring from halation or offensive snowiness from forced development of brilliantly lighted portions. At the same time there is a degree of contrast that avoids flatness; and, while halation is present, there is hardly any more than enough to seem natural and suggest the strong light that the eye would meet in looking at the scene itself.

When in addition to this painter's sense or feeling our artist begins to see things in nature that we do not, and place upon canvas what he alone sees, his picture is still more increased in value. He becomes an interpreter of hidden beauty, a revealer of unknown truths, a translator of an unwritten language.—John C. Van Dyke.

A Dry-Finger Method

By Cecil V. Ashbaugh

With an Illustration by the Author

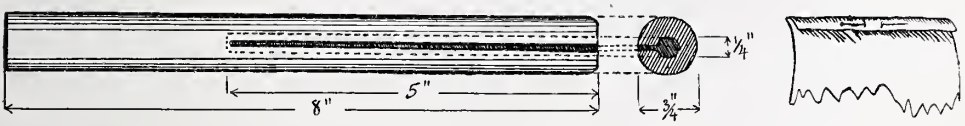
Having profited to no small extent by the many hints of value to the craft so generously bestowed in the articles by others, I submit the following in the hope that some one may thereby be given a suggestion that, if not just the one that is wanted, may take him a step farther in the attainment of his purpose.

Films, rolls especially, have had my preference for the last five or six years; not a few of them have been my own, but the major portion have been those developed and printed for others.

To develop a long roll by the usual method, i. e., by holding its ends as firmly as their slippery nature will allow, and drawing it back and forth through a tray of developer, seems to me an unnecessarily arduous business, to say nothing of fixing it in the same manner, as I have often done.

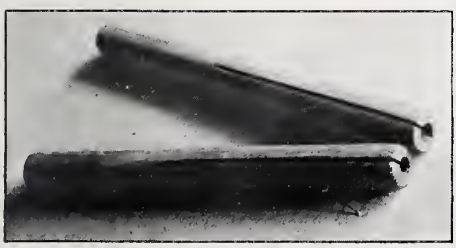
I am a believer in dilute developer for underexposure, which is only another name for the average snapshot, and this adds ages (?) to the task. Quite naturally one seeks for means whereby he may shorten the process, especially when ten or fifteen films are not infrequently to be developed in afterwork hours.

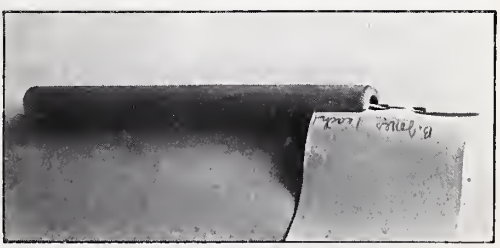
Here then, is my own method, adopted after experimenting rejecting. I take round, light dowel wood, three-fourths inch in diameter cut into about eight-inch lengths. In one end of each is bored a hole, one-fourth inch in diameter and five inches deep, after which a saw-cut slot is made in one



side, through to and running the full length of the hole. These sticks are made very smooth and then soaked in boiling paraffine.

The depth of this five-inch hole will accommodate most any roll film used. An ordinary clear glass, wide mouth fruit jar holding one quart, is filled with developer to sufficient depth to cover when standing on its edge, the size film



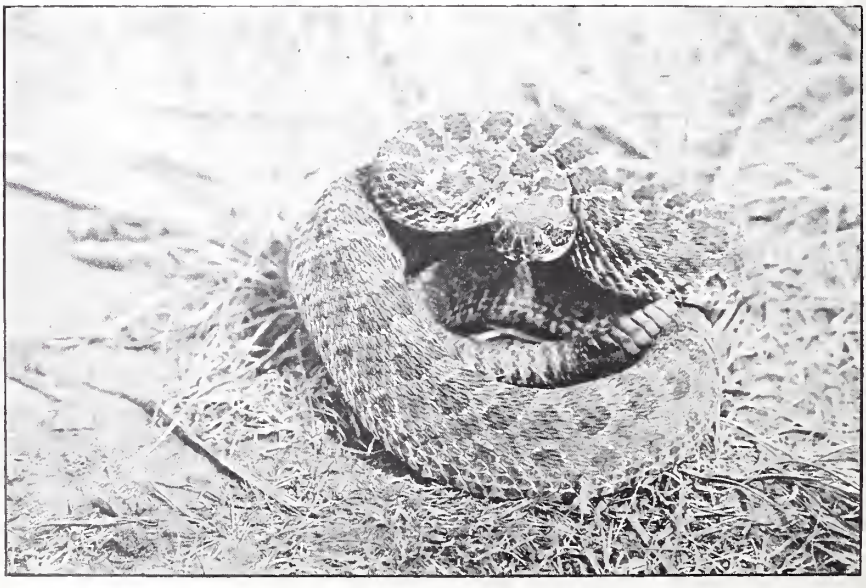


to be developed. Any developer recommended for films may be used, but the following formula I have found very satisfactory:

A:	Potassium metabisulphite	60 grains
	Sodium sulphite, dry	1 ounce
	Pyro	120 grains
	Water, cold to make	8 ounces
B:	Sodium carbonate	1 ounce
	Potassium bromide	30 grains
	Water, hot, not boiling, to make	8 ounces

To develop, add one and one-half ounces each of A and B to sixteen ounces of water. Use at a temperature of sixty-eight to seventy degrees Fahrenheit. The amount indicated, used in the quart jar, will cover any film up to four inches in width.

After stripping the paper from one end, the film is folded over just far enough to allow the insertion of an ordinary pin through the two thicknesses. This fold is slipped into the hole in the end of the stick, allowing the film to slide down the slot till flush with the end. Then, by twisting the stick, the film is rewound upon it in the same direction as it was upon the spool, the paper being stripped back as the film is wound. The operation involving the fold and pin is repeated at the other end of the film, using another of the sticks. As this is done I wind the film back on its stick half a turn and with a soft pencil write any data, such as owner's name, or number of prints wanted. As this part of the film is generally unexposed, this pencil writing shows plainly after fixing and washing. The winding is then continued in a reverse direction to that of the spool; and when all is wound on this last stick except the end caught in the other, I slip the two into the jar of developer and release. The



READY FOR BUSINESS—Bright sun, Bausch & Lomb Zeiss Protar, back combination only, f-16 stop, one-half second exposure on Hammer Ortho plate, Solio print.

SHERWOOD, OREGON—Bright sun, Goerz Dagor lens, three times filter, f-8 stop, one second exposure on Cramer Medium Iso plate, Cyko print.

spring created by the reverse winding will cause the film to spin rapidly through the developer, brushing off any air bells and wetting the surface evenly all over and at once.

Then, by grasping the upper ends of the sticks, I wind the film from one to the other, rapidly at first or until thoroughly soaked, after which a slow, gentle winding is sufficient. As I use the time and temperature method and dilute my developer, about six minutes gives me the right density for normal printing.

With the exception of the continuous stirring, fixing in a second jar containing the hypo, is accomplished in the same manner, and I often use the same jar for washing the film after pouring out the hypo, by simply setting it under the tap. If a large batch of films is being handled, I fasten both ends of each film to one stick, to prevent rolling tight, and place all in the washing vat.

Working in this way one's fingers do not come in contact with the wet film during developing or fixing, and this prevents many finger stains, as well as stained fingers. For me, this method has done away with the occasional uneven or streaky films of the past, caused by the extra warmth of the developer dripping from the fingers. In developing film pack I use tongs of a non-corrosive metal and a wool swab, in that way avoiding touching them with my fingers.

When printing I adhere to the same theory, namely that handling the prints with warm fingers does not in any way add to their appearance. By using the metal tongs and the wool swab referred to above, I find no difficulty in manipulation, and with experience, one gets very deft in lifting the print from one bath to another. Having dry hands with which to load the printing frame, cut the paper, or do other things sometimes necessary while printing, should certainly appeal to anyone.

Commercial Lantern Slides

By Frank B. Howe

Illustrations by Leading Slide Makers

Second only in rapidity to the development of the motion picture industry itself, has been the growth and change of that business' leading partner, the lantern slide. The metamorphosis through which the slide has passed during the past decade has been almost complete and today the name "lantern slide" embraces a far wider field than it did a generation ago.

Until about 1906 the only variety of slide in use was the familiar "picture slide"; that is, a slide made by contact from a negative of some scene, portrait, or other customary photographic subject. The commercial use of lantern slides at that time extended to lectures, travelogues, and home entertainment, and the firms devoted to lantern slide making were few and far between. The song slide was coming into vogue, particularly in the vaudeville theatres, and the arrival of the motion picture gave it a broader scope. Song slide sets consisted of sixteen pictorial slides, generally hand-colored, which were thrown on the screen to illustrate the song being sung by the soloist. Shortly afterwards the practice of announcing coming acts by means of slides became general with the vaudeville houses and with the scattered picture theatres. As a quick and logical development from this came the advertising slide, the contemporary of the advertising curtain then in general use.

By 1909 the motion picture business was well enough established to be a factor, and the development of present day slides may be said to date from that time. The advertising slide provided a good field for the advertiser and a lucrative one for the theatre manager, and the demand arose for slides of this nature. The black background slide was then introduced and its rise to popularity was rapid. At first a rude design with lettering around seemed to suffice, but quickly better work was demanded; and, in its full development, the lantern slide was designed by experienced artists and show-card experts, photographed by good photographers and colored by true artists.

The opportunities presented caused the formation of a great number of new slide companies, many of which, alas, were incompetent in the extreme,

THEATRE ANNOUNCEMENT SLIDES By KANSAS CITY SLIDE CO.

ADVANCE AND PLAYER SLIDES By NOVELTY SLIDE CO.

and to these is largely due the disrepute into which advertising slides fell. Cut-throat prices, even as low as ten cents for a made-to-order hand-colored slide, brought quality so low that exhibitors refused to run them because of the complaints of their patrons. To this was added the operator's carelessness in projecting the slides, a condition which exists today as shown by finger-marks and other dirt, and one that the patrons naturally resent. Along with these came the theatre announcement slides, and these last have survived the downfall of the former mainly because of the impossibility of entirely doing away with them.

It is the practice of film manufacturers to supply the theatres with slides announcing coming attractions. Such slides give the name of the picture, its stars, matter having advertising value, perhaps a scene from the picture, and a blank for the exhibitor to write in the date he is to show the film. Such slides are used over and over, the theatres in turn simply washing off the previous exhibitor's inked-in date and substituting their own. While these slides are by far the most popular, they too often lack quality. The lettering is generally so fancy as to be almost unreadable and the photography is frequently so poor as to make

THE FIRST IS A NOVELTY—THE PORTRAIT OF THE ADVERTISER BEING INSERTED IN PROPER BLANK SPACE SHOWN IN THE FIGURE. THE NEXT TWO ARE COMBINATION ANNOUNCEMENT AND ADVERTISING SLIDES. THE LOWER THREE ARE STRAIGHT ADVERTISING SLIDES By KANSAS CITY SLIDE CO.

the picture used suggest Cubist art. There is indication of these slides suffering a decline in popularity, due entirely to this condition. The advance slide, however, can hardly be entirely done away with on account of its value to the theatre in advertising coming attractions to the very people they wish to reach.

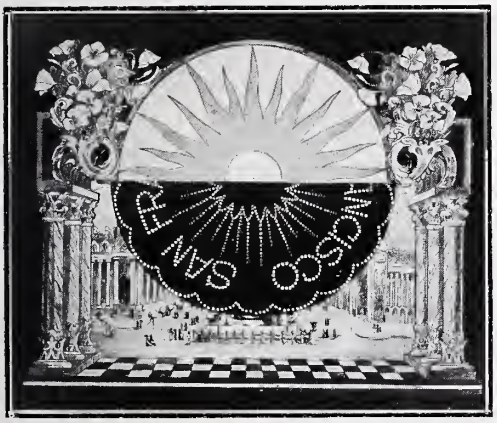
Closely associated with these last are the photo-player slides that serve to announce the coming of a particular star, the star being featured above the picture itself. These have also fallen into disuse, again because of poor work in their production. Crude wording had much to do with this condition; and, poor photography made the portrait of the player, the principal part, so hopeless that the slide lacked commercial value.

PHOTOPLAYER ADVANCE SLIDES By FRANK B. HOWE

The use of announcement and advance slides will never be discontinued as they are a necessity. But to bring them back to their full popularity, there must be a radical change from present conditions. Prices must go up. Then quality will follow. Once quality is secured, popularity will return. At present, slides of this type, and colored at that, can be secured at nine cents. Nothing less than fifteen cents wholesale can be sufficient to warrant a raise in quality. Two companies are now holding to this price, or very near it. Their slides are getting better, because, with such a price, they can afford to employ good photographers and designers. The great fault generally is the poor quality of the illustrations used on the slides despite the fact that the originals are good black and white prints with glossy finish, ideal for copying. To show that good work is not impractical, examine the reproduction of the advance slide of Miss Agnes Vernon shown above. This was copied from an original in sepia on buff stock with linen finish. If good results can be secured with photographs so illy suited for reproduction, is it impossible to hope for better results from pictures made especially for copying purposes? The most hopeful slides in this line at the present time are the ones put out by the Triangle Film Corporation and the Orpheum Circuit. If more producers would follow the lead of these two leaders in their respective lines, the advance slide would quickly

come back into its own. I do not mean to say that these slides are the only good ones to be seen, but their consistency serves to prove our case.

It might be well to briefly mention the other types of slides. There are mica slides, brass slides, and the common scratch slides made by opaquing clear glass and scratching the lettering thereon. Typewritten slides, used to some extent, are made by inserting a piece of clear gelatine between two sheets of carbon paper in the typewriter, typeing the wording and then mounting between two cover glasses in the usual way. All these are but minor variations, however, and do not materially affect the trend of slide development.



A VITASLIDE—AS INSERTED

Last fall, when in San Francisco, at the suggestion of Mr. Kaiser of Hirsch & Kaiser, I had the pleasure of visiting the plant of the Vitaslide Company and, through the kindness of Mr. Breck, inspecting some slides made on a new principle which may have a strong effect on future advertising slide work. In these, by a combination of expansion and the action of gravity within the slide itself, movement is effected. We saw a row of owls rise, and in stately fashion, alight on the limb of a tree, and many other similar effects were produced with slides in which advertising matter was placed. Such slides would be valuable as a means of attracting attention and getting the advertising part read, if displayed in a merchant's window or other similar place, and they have the additional advantage of being automatic in action, making them operator-proof, a decided benefit in these days. Removed from the lantern, to its original position, so that the slide is no more trouble to project and care for than the ordinary one. At the same time I was shown a new projector which, by the use of a motor, projected a series of slides without any outside assistance, the slide being automatically changed at regular intervals. Something in that line seems to be the future of the advertising slide. Probably in the smaller suburban theatres, advertising slides will always maintain to some extent; but in the larger metropolitan theatres, advertising slides are manifestly impossible. With such a projector as this, however, placed in a store window, the possibilities are unlimited.

A VITASLIDE—MOTION COMPLETED

We should also mention another novelty, one not yet adapted to advertising perhaps, but nevertheless one that has great possibilities as an interest-creating picture. These are the spectograph slides manufactured by the Florida Photographic Concern of Fort Pierce, Florida. The colors are photographed directly by the Paget process and in their Color-Changing Chameleon slide, which we have seen, there is a gradual and natural change from green to reddish-brown that is very pleasing and interesting.

As to the photoplayer slide, I look for its return to general use; in fact, I feel so sure on this point that I am making nothing else but photoplayer slides myself. What we need in this line is more simple design, less wording, and better photography. If the theatre patron is told that the star of the next night's attraction is the "foremost star of the screen" and the following night learns that another is the "leading screen star", and this is repeated at subsequent visits, he loses confidence and the advertising value of player slides is lost. There is really no advertising value in excess wording. It is far better to allow the star to bid for popularity on his or her own merits. All that the patron wants to know is the name of the star, the title of the picture and the date it is to be shown. Good photography, especially in the principal part, the portrayal of the star, is as essential in these slides as it was in the announcement and advance slides. The few player slides herewith reproduced will show my ideas in this line far better than I can explain them. The fact that these sell at thirty cents each, in black and white, proves, I think, that exhibitors will pay a good price if they can get good slides.

In conclusion, I can do no better than to quote the Kansas City Slide Company. They have, it would seem, summed the whole matter up in a paragraph in their catalogues when they say: "Price is the main stock in trade of a good many slide manufacturers, as well as slide users. Slide manufacturers who make the price the whole consideration liken themselves to a seething, boiling, bubbling pot that bubbles and spouts until it grows dry and then they either fade away into the landscape or realize that best quality cannot be made at a cheap price. Time has taught the world that in order to stay in business the price must be in harmony with the quality. Poor, cheap slides are hurting the business. Time will change this, as the tendency is now to give more attention to the matter of better slides."

Let us hope that such is the case.

PARAGRAPHS PHOTOGRAPHIC

Kindly Contributed by Our Readers

A SAFE AND PRACTICAL DEVELOPING LIGHT: Take a piece of cardboard 14x20 inches in size, white preferred, and bend it the long way until the two ends are eight inches apart, connecting them in this position by pasting two thicknesses of orange tissue across this opening. Next cut two or three inverted V-shaped openings in the bottom at the sides and back. This arrangement set over an ordinary low kerosene lamp gives a good safe light for loading printing frames and developing gaslight papers.—A. N. Brown, Iowa.

INK FOR LABELING BOTTLES: In a small bottle place an ounce and a quarter of methylated alcohol, add a half ounce of shellac, and when this last is dissolved, immerse the bottle in hot water until the solution is warm. Then add slowly, while stirring rapidly, to a solution composed of one hundred and fifty grains of borax dissolved in two ounces of water. Finally, add coloring matter to suit, four or five grains of methyl violet being satisfactory, and dissolving well upon shaking. This makes a very fine waterproof ink for writing the labels upon bottles and for other purposes about the dark room.—W. E. R., Tennessee.

STRONG ENLARGEMENTS FROM FLAT NEGATIVES: Give a full exposure and then develop the print strongly without regard to the high-lights, getting the shadows as dark as possible. Fix and wash in the regular manner, then immerse in the following:

Potassium iodide	60 grains
Iodine	6 grains
Water	20 ounces

The whites of the print will gradually become dark blue when it should be placed in the ordinary fixing bath where the whites clear. Washing follows. The solution keeps well and if the first effect is not enough, repeat the operation. —M. S. S., New York.

CLEARING BROMIDE AND GASLIGHT PRINTS: The following reducer is an excellent solution to keep on hand for slightly reducing and clearing up prints, clearing white edges and vignettes and the like. It is made up as follows:

Iodide of potassium	40 grains
Iodine	4 grains
Water	12 ounces

This is a stock solution that keeps indefinitely. It should be used diluted until about the color of sherry wine. For clearing up edges of prints apply with a tuft of cotton and for local reduction it may be used in the same way, followed by fixing. For clearing up a print all over, give a rapid immersion in the solution

and follow by application of fixing bath and the usual washing. A little confidence and experience gained with some waste prints will enable one to use this solution to great advantage on prints that require only a little clearing up to make them satisfactory.—T. C. F., Illinois.

STAINLESS PYRO DEVELOPER: Frobisher's formula for a two solution pyro developer is as follows:

No. 1:	Water	12 ounces
	Sodium sulphite, crystals	3 ounces
	Ammonium bromide	20 grains
	Citric Acid	60 grains
	Sulphuric acid	1 ounce
	Pyro	1 ounce
No. 2:	Water	12 ounces
	Sodium carbonate, crystals	4 ounces

For normal exposure take one-half dram of each solution to every ounce of water. This gives brilliant negatives for hand camera exposures, instantaneous work and the like and will not stain plates, films or fingers. It also possesses good keeping quality.—T. E. P., California.

USING DRY PYRO: Professor Eder's formula is an excellent one and reads as follows: In ten ounces of water dissolve one ounce of sodium sulphite crystals; add one-half ounce of sodium carbonate crystals, and then make up to sixteen ounces by adding water. For normal exposures take two and one-half grains of dry pyro to each ounce of the above solution required for use.—T. E. P., California.

COPYING CRACKED SURFACED PRINTS: One occasionally has a print to copy that presents an uneven surface. There are either small cracks in the original glossy surface or that same glossy surface has been worn away in spots, making it difficult to secure a copy negative of even density. Such prints, should be soaked in water, to which has been added a little glycerine, until wet through, then squeegeed onto a clean glass plate and copied, through the glass of course, while still wet.—B. N. M., Kansas.

MR. FAIRMAN'S FAVORITE DEVELOPER: A developer that will keep for years without deterioration is made up as follows:

No. 1:	Water	6 ounces
	Sulphuric acid, added drop by drop	3 drops
	Pyro	1 ounce
No. 2:	Water	32 ounces
	Carbonate of soda, crystals	192 grains
	Sulphite of soda, crystals	1½ ounces

For normal exposures take one dram of No. 1, four ounces of No. 2, and three ounces of water, adding a few drops of a ten per cent solution of bromide of potassium if overexposure is feared. This developer was originally put forward as particularly suited for light draperies, but good results with these depends somewhat upon "the man behind the gun".—T. E. P., California.

CAMERA CRAFT

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What a Photographic Magazine Should Be

If our readers only understood how helpful and inspiring they could be by writing an occasional letter to the editor telling him what features or what articles they liked, and which ones they did not care for, the work of trying to give them what they want would be easier and more enjoyable. We do get quite a number of letters from week to week, in which the writers express their appreciation in more or less strong terms, but few of them are specific in even their praise. This is no doubt due to a fear that they may be understood as trying to tell us how the magazine should be conducted. This is a mistaken idea. Any reader can write in and tell us just what he, personally, likes best and what interests him least and feel sure that we understand it as only an expression of his personal likes and dislikes in the matter. With a few such letters each week it would be much easier for us to guess what kind of material could be used in making up the magazine so that we might stand the best chance of pleasing the largest number of readers.

Once in a great while, someone, to whom we have sent a sample copy, is kind enough to write and explain that they fear our magazine is a little too far advanced for them, as he is only a beginner. This is the wrong way of looking at the matter. An instructor that does not keep in advance of his pupils does not advance them very far. In addition, elementary instruction in photography is so well provided by a number of inexpensive and easily available handbooks that it would seem out of place for a magazine to concern itself therewith to any great extent. Again, an occasional suggestion is made that we do not devote enough space to pictorial work and its production. This again is the function of the books more than of the magazines. There is no "method" or "process" to pictorial photography, and consequently there is hardly anything new in their application or improvements therein. But there does remain, even after we extend the list of topics best dealt with in book form, much that the books do not cover; and these, it would seem, make up the field in which the magazine should put forth its efforts. These comprise the means and methods of individual workers in the various lines of photographic work, the new methods that individual workers may hit upon as well as the improvements upon old methods that they may devise. The discussion of photographic subjects, if rightly carried on, brings forth ideas and suggestions that have value; and, not infrequently, criticism of even widely accepted theories brings forth a measure of light that is not without value.

But that our heading may be justified, let us say that a photographic magazine, as we see it, should be as helpful as it can, should afford the reader, as far as possible, that which he cannot readily obtain from other sources, and it should aim to encourage him forward to more advanced stages in his photo-

graphic career. At the same time, the preferences of the readers should be considered, but this last necessitates an occasional expression of opinion from them, something with which the editor is entirely too infrequently honored.

The Hood Method Available

As our readers may remember, there appeared, in our May, 1913, issue, an article by William Hood dealing with the use of ray screens or filters in multiple to prevent overexposure of the high lights and to avoid, to any desired extent, the clear glass shadows common to negatives of subjects having considerable contrast, locally known as "The Hood Method". Mr. Hood wishes it made known that this method, since improved and covered by United States Letters Patent No. 1,182,485, issued May ninth, 1916, is open to the free use of everybody desirous of using the same for other than commercial purposes. Prompt attention will be given letters concerning the commercial use of the method if addressed to, William Hood, 957 Leavenworth Street, San Francisco, California.

A Fiction Among Futurists

There are many odd ways of undervaluing education. Just as a doting world loves to think that a little child, "without any instruction whatever", has actually accomplished some marvel of mature skill; so, too, it relishes the romantic fiction that a man who is thoroughly master of his art will express himself in incredibly childish and crude fashion. It has been said by many, and even believed by a few, that the prophets of extremist art are often persons highly competent in the practice of accepted methods. This would be interesting if it were true, but it is not true. The fact is, not one man of really extraordinary and universally acknowledged power in art has ever joined the weird brothers. A sculptor was describing a portrait seen in the studio of a "neo-Futurist". The subject was a noted bridge builder. At left was a gross purple outline of an arch, in the center a jagged pseudo-geometrical shape in emerald green, at right two flattened red circles joined by a dark line. Other than that line, which was intended to suggest "the bar of Michelangelo", there was no vestige of anything so commonplace as form or feature. "He declared that this was the way he felt the builder of bridges", explained the sculptor, adding reflectively, "When I see Sargent doing that sort of thing, I shall begin to think there's something in it!"

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In art as in other fields, many are called and few are chosen. Few compel instant attention because of extraordinary power. Despairing of legitimate distinction, yet avid for distinction of some sort, many of the unchosen take strange ways to elect themselves.—*The American Magazine of Art.*

A PHOTOGRAPHIC DIGEST

Edited by H. D'Arcy Power, M. D., Burlingame, California

Criticisms and Color Perception

One of the most difficult things to judge is the truth of the color rendering in a color photograph when the original is not available for comparison, and even when such comparison is possible it is by no means certain that different critics will agree. Various things contribute to these difficulties, and it is just as well to consider some of these items before venturing on too definite a criticism, or before accepting another's opinion.

At first sight it would seem quite easy to determine the truth or falsity of the photographic copy when it can be compared side by side with the original. It is, in fact, quite easy if the original is itself only a representation of nature, and not nature itself. Any person not color-blind is competent to determine whether a photographic copy of, say, a water-color drawing is correct or not; but the same person would be no more competent to judge the truth of a photograph direct from nature than he would the truth of the drawing, unless he happened to possess the knowledge of the trained artist with regard to the translation of color. This is just where the trouble comes in, for while a painting is capable of being reproduced in fac-simile, nature can only be translated. More than this, it often requires transposing as well, its color scheme being set in far too high a key for the medium that is to be employed; but neither translation nor transposing is possible to, nor can be judged by, anyone not sufficiently trained to be able to perceive and recognize the true colors of nature. It is one thing to recognize a color seen in a drawing, but quite another to do the same thing in the case of nature, or even a "still life" subject, and this is naturally a fundamental difficulty in the way of the would-be critic of color photographs.

It is fairly well known that true perception of color in nature is to a very large extent a matter of education. Give the uneducated pupil a full complement of pigments and materials, set him before a natural object, and then he will probably be unable to match correctly any one of the natural colors, while the attempt to deal with several will almost certainly produce a fantastic travesty. The fact is, he has not yet learned to see color, and this accomplishment will take him some time to acquire. Very long practice will be necessary before he masters it, and so, in the meantime, he is a person whose ability to perceive color is steadily improving and therefore changing. This can be seen in his work; but whether the change is rapid or slow depends entirely on the individual. A natural consequence is that when he acts as a critic of a color representation his opinion changes as his experience grows, and the production that he will approve in early days he will condemn later. Progress in color perception is, however, not confined to individuals; it is evidenced in the human race as a whole. There is evidence enough to the effect that in earlier ages man had a smaller color appreciation than he has now; that is to say, he could not see so many colors. According to Mr. Gladstone, Homer was color-blind, because he described the sea as wine-colored. This was poor logic, because the same data might be held to prove that Homer's wine was sea-green in color, but there is more evidence to the effect that in and about his age men generally were more or less color-blind; and in any case it is remarkable that they mentioned very few colors in their writings, and used so few in their decorative work, so far as we can judge from the scanty remnants that now exist. The subject is a difficult one, but there is now more or less general agreement that the power of perceiving color is one that man has only acquired gradually, and a natural consequence of this is the undoubted fact that now different individuals have reached different stages in the process of development. The most backward are probably what we call color-blind, while

the more advanced almost all differ in the degree of their advancement. Hence it follows inevitably that as critics of color rendering they differ also, so that a result that may be quite satisfactory to one may be distasteful to another.

There is yet another factor that affects criticism, and that is the age of the critic. Assuming that at some time he reaches the highest modern degree of proficiency in color perception, he will be fairly certain to lose some of it later. Two things are likely to happen to his eyes: The lens will tend to become yellowed or discolored, and also the materials of the eye will be less perfectly transparent. Color then tends to become degraded, partly by absorption in the discolored lens, and partly by scattered light within the eye. His ability to distinguish subtle differences of color becomes less acute, while the colors themselves will appear to change. If we take all these various points into consideration, it becomes very evident that the task of comparing an artificial color representation of nature with nature itself is likely to lead to very different results with different people, if the absolute truth of the color rendering is the point to be judged. The lesson seems to be that this is not the important point to be considered, if a fair judgment is to be arrived at. The question should not be, Are the colors true to the original natural colors in the opinion of any one individual? but rather, Are they within the range of possibility? Further, it should be considered whether the colors are numerous enough. That is to say, is a predominantly green subject, such as the sea, represented in shades of green alone, as the tyro at painting will be likely to represent it, or does the result include the browns, blues, purples, etc., that are always present, though only visible to the trained eye? In respect to such details the untrained eye is temporarily color-blind, while some color processes appear to be permanently so. Then, again, there is the important question whether the colors are as harmonious as they always are in nature, but very often are not in representations of nature. Some color processes fail lamentably in this respect, as everyone knows, and a common cause of the failure seems to be the inadequacy of the process in respect to some one particular color.

An interesting point suggests itself in regard to the subject of color perception. If this is a faculty that increases with the education of the individual and of the race as well, how near to finality have we reached? In connection with this there is a matter concerning the spectrum that does not seem as yet to have been satisfactorily explained. The spectrum shows a long series of colors, each of which is primary in the sense that it cannot be dissected into components. But all except three of the colors can be matched by mixing other spectral colors, and the exceptional three, called primaries, are enough to reproduce all the rest. For example, spectral green and violet will combine to match spectral blue, but the green and violet cannot be matched any way. The question at once presents itself: Is this a true match, or is it only defective color perception that allows us to take it for a match? If color perception is still developing, possibly future generations will have to revise color theory very considerably, while modern color photographs will look to them even less true to nature than they do to us now. If, however, they only show the three qualities by which I have suggested they can alone be fairly judged, they will perhaps be allowed to pass as pictures.—C. Welborne Piper, in *British Journal of Photography.*

Working Up Negatives for Subsequent Enlarging

Anyone who has tried to make an enlargement from a negative with matt varnish and stump work on the back of it, knows that it is very far from being successful as a rule. The grain shows up, the slightest inequalities in the varnish reveal themselves, and a plate that gives a good contact print may be quite useless for any other purpose. Norman Deck, writing in the *Australasian Photo-Review,* describes his method of avoiding this by the use of fine ground-glass on which the work is done, which glass is then bound up in contact with the negative.

The cheapest and best way to get the ground-glass is to make it, using for the purpose an exceedingly fine grade of carborundum powder, known as 3F. When two pieces of clean glass are rubbed together with some of this powder between them, and moistened with water, it will be found that in four to five minutes two absolutely flawless screens of a very fine grain are produced, with sufficient tooth to take any amount of work. They also make most per-

fect focussing screens. The usual emery powder or knife polish is much too coarse for this purpose. These ground-glasses are held in contact with the negative which is to be modified, and are worked up with Coute crayon sauce, or with lead-pencil.

Usually it is best to have the ground-glass in contact with the back of the negative, ground surface outwards. In this case there are two thicknesses of glass between the actual film of the negative and the ground surface, so that when enlarging, if the film of the negative is accurately focussed, the ground surface is out of focus and the grain diffused, provided, of course, an enlarging lens of fairly large aperture is used.

Occasionally, however, when the negative which is undergoing treatment needs emphasis in the nature of sharp lines, this distance is too great, and then, when working up, the ground-glass should be placed in contact with the film of the negative with the ground surface facing the operator. When the work is finished, the positions of the negative and the ground-glass are simply transposed. When this is done only one thickness of glass will separate the work from the actual film, and the work will be sharper in its effect.

If preferred, the ground-glass may be bound up with the negative like a lantern slide. Ground-glass has a distinct advantage over matt varnish, as it is not liable like the latter to get scratched and spoilt; and if the work has been overdone it can be washed off or rubbed out with a pencil eraser and be redone. When the negative and ground-glass are inserted in the enlarging lantern and the film is focussed up, it will be found that with very thin negatives the resulting enlargement will show a slight grain, but the grain will be much less noticeable than that produced by matt varnish; on fairly dense negatives the grain will barely show at all. If, however, black chiffon is placed over the enlarging lens, the grain will be cut out absolutely, even with the thinnest of negatives. The chiffon also prevents any retouching from showing, and is an advantage in all respects.

The ground-glass also considerably softens the contrasts of the negative, and needs a greatly increased exposure. When the grade of carborundum mentioned above is used, the exposure must be increased six times. The softening of contrasts may be an advantage; but when it is not wanted, it can be got over by varnishing the worked-up glass with ordinary negative varnish. The varnish not only fixes the crayon work, so that it will not rub off, but also makes the ground-glass more transparent; after varnishing, the exposure is only increased one and a half times instead of six times.

Stump work with black crayon powder, when the negative is to be enlarged, should be twice as deep on the ground-glass as is needed for contact printing. For some obscure reason it has only half the effect one would expect from visual examination.—*Photography.*

Intensification With Mercury, Iodo-Chloride and Notes on Other Formulæ

In a recent article, The Properties of Iodide of Mercury and their Application in the Preparation of Intensifying Solutions, it was pointed out that a solution of mercuric iodide in mercuric chloride appeared to have certain advantages as a bleacher in place of the usual solution of plain mercuric chloride. Some experiments I have made in this direction seem to show that these advantages are decided ones, especially if we use a stronger solution of the iodide. The bleacher described in the article referred to was prepared by adding a solution of potassium iodide to one of mercuric iodide until the precipitate formed just ceased to be dissolved. If this operation is performed in the cold or at normal temperature, very little iodide is required, and the final result only contains about one part of mercuric iodide to fifty of mercuric chloride, as stated in the article. If we heat the solution these proportions change to something like one to ten, so that we get about five times as much mercuric iodide in the solution.

The following formula can be used:

A: Hot water.....20 ounces
Mercuric chloride..... 1 ounce
B: Cold water ..... 5 ounces
Potassium iodide .....45 grains

Dissolve the mercuric chloride, and when dissolution is complete add solution B, not all at once, but in small quantities, say a drachm or so at a time, shaking after each addition, until the solution becomes clear, and, if necessary, heating further. If B is added all at once, a large amount of precipitate is formed which takes some time to dissolve. When perfectly clear, the solution is allowed to cool, and when it reaches nor-

mal temperature a little red precipitate will reappear, which must be removed by filtering. Care should be taken not to inhale the steam from the hot chloride solution.

By dissolving mercuric iodide in mercuric chloride we get mercuric iodo-chloride, and five parts of the iodide should be capable of combining with six of the chloride. The iodo-chloride is, however, not very soluble, so the attempt to use these proportions gives a very large precipitate on cooling the solution. If we prepare the solution by adding potassium iodide to mercuric chloride the corresponding weights of each ingredient will be two of iodide to five of the chloride; but as then about three-quarters of the iodide will go into the precipitate, it is useless to use more than one part iodide to ten of mercuric chloride. It does not seem to make any difference in the result whether we dissolve mercuric iodide straight away in mercury chloride, or produce the iodo-chloride by adding potassium iodide to mercuric chloride. I think it is possible to get more iodide into solution by the first method, but it is far more troublesome than the second method. The chemical difference in the results cannot be very material, as, while in the first case we get a solution containing mercuric iodo-chloride and mercuric chloride, in the second case we get the same two ingredients together with a little mercury-potassium-chloride.

The red precipitate thrown down in the cool solution consists of small red crystals, apparently of mercuric-iodo-chloride, mixed with others which may be mercuric iodide, and some lighter crystals of mercurous-iodo-chloride. The first mentioned crystals are soluble to some slight extent in water, and such a solution will act as a bleacher, though a very slow one. The iodo-chloride is more soluble in mercuric chloride, but obviously the total solubility must depend both on the amount of chloride present and the degree of dilution. I cannot give exact figures, but in practice one part by weight of potassium iodide to ten of mercury chloride will give a solution showing a slight excess of the iodo-chloride salt, and, therefore, one that is saturated.

A point worth noting is that while the addition of potassium iodide to mercuric chloride solution gives mercury iodo-chloride in the first stages, if we add mercury chloride to potassium iodide solution we get mercury potassium iodide. This latter salt is the one commonly relied on for intensification with mercury iodide, but it is very curious that nearly all the published formulæ prescribe the addition of the ingredients in the wrong order. The simplest and most direct way of getting the ordinary solution of mercury potassium iodide is to take some iodide solution and add to it mercury chloride solution until a permanent precipitate just begins to be formed. We can then clear the solution by filtering, or by adding a few drops more iodide, or a little hypo or sulphite. If we proceed in the opposite way, as usually advised, we begin by forming the iodo-chloride compound, which is not wanted, and some photographers have been known to make mistakes and stop at this stage in error.

Another point worth noting in regard to the mercury iodide formulæ usually given is that several of them contain an excess of either hypo or sulphite, the result being that the mercuric iodide they contain is decomposed to mercurous iodide, a green insoluble compound that is useless for intensification purposes. While experimenting with various formulæ I came across some commercial mixtures that were full of the mercurous compound, while some of the published formulæ when made up showed a heavy precipitate in a few hours. The admixture of hypo or sulphite with mercuric iodide seems in any case very inadvisable, excepting in very minute proportions, and for the purpose of getting a clear solution potassium iodide is much safer. So far as the final results of intensification are concerned, none of the usual iodide formulæ are at all satisfactory in my hands. More often than not the result is a spoiled negative, but so far I have found no objections to the use of the mercury-iodo-chloride formulæ other than those which apply generally to the use of mercury. When blackened with ammonia, the greater density which it seems to give as compared with mercury chloride appears to be due partly to a diminished loss of material in the blackening bath and partly, no doubt, to the greater density of the iodide compounds produced. With sulphite there is little if any increase in density over that given by chloride alone, but with either mercury or sulphite the resulting image is blacker and cleaner looking.—C. Welborne Piper in *British Journal of Photography.*

THE AMATEUR AND HIS TROUBLES

Conducted by Fayette J. Clute

Trimming the Print

There are a lot of our readers who send us occasional batches of prints with the request that we run over them and make a few comments or criticisms. This we are always glad to do and nearly always have the pleasure of hearing from the sender with thanks and words of appreciation. However, one such friend wrote back last week and complained that we were seemingly a little obsessed with the idea that the proper way to improve a print was to trim away a good portion. The truth of the matter is that the average beginner finds it practically impossible to make a picture with the average camera that cannot be improved by trimming, mainly because the lens is not of very long focus. If this average worker would use a lens of longer focus the lens itself would do the trimming. The camera makers are not to blame; the lenses they furnish being no doubt the ones most generally useful; but for purely landscape or pictorial work a longer focus would be better. In addition, a large number of camera users fail to realize that a picture should not have divided interest and they also overlook the fact that unnecessary material at the edges simply detract from the effectiveness of the picture itself. Trimming is generally done to get rid of material not wanted, to remove a second or conflicting point of interest, or to take the principal point of interest away from the center of the picture. The reader mentioned above as complaining of our penchant for trimming, felt aggrieved because we suggested the trimming away of a very pretty cloud effect that graced the upper half of a wave picture. As it was, the clouds prevented the beholder from concentrating his attention on the waves, the latter being really the main point of interest. Another of his pictures, a roadway scene, required trimming from the top because that space was filled with a meaningless jumble of foliage that brought the point of interest, the visual termination of the roadway, directly in the center of the picture space. And this reminds me that some of these readers who send in prints have a sort of natural appreciation for subjects that seem complete and alone, while others seem to invariably select scenes having at least two nearly equal centers of interest. Still others have a bad habit of selecting such views that their pictures always seem incomplete, as strips cut out of larger pictures. I do not know why this is, but it seems as if one worker should trim away a good part of every print he turns out, while another invariably makes pictures that seem to lack something. One of the former recently decided he would try a long focus lens and found it an almost complete remedy for his failing. But the use of a shorter focus lens would not help the worker who made the other kind of pictures because the fault lies in his selection of views that contain strong lines running across the picture space. These, ending abruptly where the edge of the print cuts them off, gives one a feeling of the picture being incomplete, of the interest being denied by the boundaries of the print.

A Narrower Angle

We have been coaching an amateur friend, doing it in a rather spasmodic manner, it is true, for the past few months. He seems to be getting along nicely except for a rather persistent inclination to get all out-doors into every negative that he makes. We have urged him to try little bits, to use a longer focus lens, to get closer to his subjects, but to no good purpose. He complains that he cannot find any of our "little bits" that compose well, that a longer focus lens simply means getting that much further away, and that getting closer to his subjects means cutting off of necessary portions of the scene. Finally, we got him to agree to a plan as follows: As soon as he had made an exposure on one of his favorite style of landscapes he was to leave the camera

standing where the exposure was made, remove the front combination of his lens, rack out the front to the proper distance, and then expose a plate on the best composition that he could find within the view embraced by the first exposure. This was done, this plan carried out, on his last excursion abroad, with the result that a number of fine pictures were secured, pictures not open to the objection that they included entirely too much subject matter. Not a few workers find great difficulty in picking out good compositions from the mass of material before the camera, and to such a trial of this plan might be well worth while. Another good idea is to carry about with one a piece of cardboard in which is cut an opening of such a size that when held at a certain distance from the eye there is embraced the same amount of view as the plate would receive were an exposure made. The margins of the card cut off all except the part being viewed and consequently there is a much better opportunity of judging of the composition and the most desirable portion to include.

Cement For Porcelain Dishes

A correspondent writes to ask how he can make a cement like that he has bought of street venders, a whitish paste that has excellent adhesive qualities when fresh. We do not know the exact formula used but it is no doubt nearly, if not the same as the following, which is very satisfactory. To six ounces of water glass (sodium silicate), add four ounces of ordinary fish-glue and one ounce of precipitated chalk, and rub into a paste. Of course a much smaller amount can be mixed up, using the same proportions. To use, rub a little over the broken surface, press into good contact and dry in a warm place.

Deterioration of Blue Print Paper

An Ohio subscriber sends us a sheet, part of a supply he has on hand, of a very fine quality of blue print paper, and asks if it has become stale because he fails to get pure whites. The paper has deteriorated through age, such paper not having very good keeping quality. About all that our correspondent can do is to over-print it quite severely and then after washing subject the prints to a weak bath of ammonia, carbonate of soda or oxalate of potash. Doing this will clear up the whites but a corresponding amount of blue will be removed from the image as well, hence the advice to over-print.

Mounting Prints On Glass

A reader in Iowa wants to know how to mount prints on glass after the fashion of the old style opalines. The directions are as follows: Prepare a water bath heater by placing one vessel inside of a larger one to contain hot water. Then take an ounce of good gelatine, preferably a soft grade, and swell it in some water by allowing it to soak for several hours. Next take out of the water, place in the inner vessel of the water bath and make up to ten ounces. Put hot water in the outer vessel, apply gentle heat until melted. Thin still further or almost water thin when hot. Put in a shallow dish, also kept warm, immerse both glass and print until they are warm, withdraw in contact, and immediately rub in contact with a flat rubber squeegee, lastly cleaning off the face of the glass and place aside to dry.

Counting Time

Mr. Steadman's method of doing this has one advantage over the plan usually advised of saying: One hundred and one, one hundred and two, and so on, his formula reading: one-half and one, one-half and two, and the like, for the given number of seconds. The latter formula divides the second into more clearly defined quarters and there is less danger of shortening two of these small periods as in saying "hundred" as a two-syllable word. By trying the simple experiment of counting in this manner while another holds a watch to keep time, first using the general formula and then Mr. Steadman's, one will find the latter to give the best results. And this brings me to another thing and that is the unimportance of counting these same seconds off with any great degree of exactness. If one can count up to sixty seconds and find by consulting the second hand of his watch that he has varied only five or six seconds from the actual time, he is close enough for all practical purposes. Six seconds in the minute is only ten per cent and that is a variation that will make no difference in the result of any exposure otherwise properly calculated.

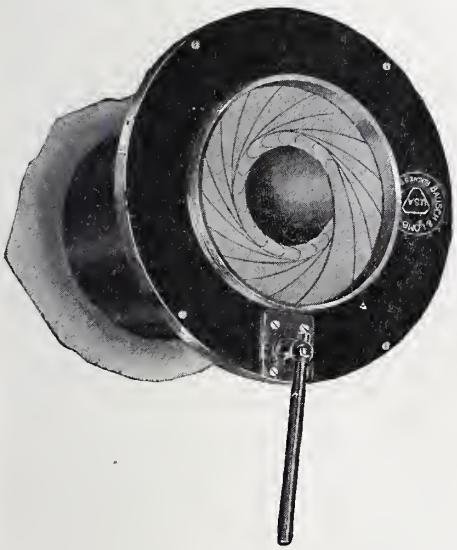
THE CAMERAMAN'S PAGE

Edited by Hal G. Hall

A Practical Department of Comment on Methods and Apparatus

A New Iris At a Moderate Price

Recently the amiable H. W. Sanford, with the professional supply department of the Howland & Dewey Company, showed us a new iris made especially for the use of cameramen. This new product of the Bausch & Lomb Optical Company was made at the suggestion of R. E. Merville of the San Francisco branch.



While simple in design and light in weight, this new iris "fade-out" or "diffuser" is of almost three inch aperture,—almost twice the diameter of the old stereoptican iris that is sometimes adapted to the motion picture camera. In addition, this new iris is but a trifle, if any, heavier or more bulky than the latter. Having a large opening, it can be placed a great deal farther from the lens when a minimum diffusion of the edges of the circle is desired. Both sides being threaded, this iris can be fitted to screw onto different extension tubes and accommodate a mask-box or other device if desired. The leaves of the iris are blackened steel, of such a shape that a perfectly circular opening is maintained at all times, and one that, without any danger of springing or breaking the leaves, can be closed entirely out. Another advantage lies in the operating lever being of sufficient length to make a steady fade-out easy of achievement.

Halation

Halation, properly speaking, is the reflection and diffusion, within the film, from the lighter areas to the adjacent darker ones. Undue contrasts, underexposure and forced development usually conspire to produce halation to a noticeable extent. There is, in addition, what is sometimes called "lens-halation". Whether this appellation is correct or not, the fact remains that lens shades are essential to the successful use of f-3.5 motion picture lenses when strong light prevails.

Quite commonly the term halation is applied to the results of plain overexposure in spots. In such case "lack of latitude in the film" may be somewhat unjust but perhaps not far from the truth. While this brand of halation threatens near the edge of the film, the danger can often be greatly reduced by interposing a before-the-lens mat rather close to the front of the lens. In some cases it will not be necessary to bring the mat close enough for the actual image to show in the picture, for, when much out of focus, a sort of half-shadow or penumbra surrounds the opaque image of the mat. The adjustment of the mat must be made with the lens aperture with which the scene is to be photographed, because, as with the before-the-lens iris, the location of the edge of the mat in relation to the frame line, changes with each change of the lens stop.

In many cases the use of an iris quite adequately cuts down superfluous illumination at the edges of the picture while serving its legitimate purpose. This last is a pictorial one consisting of subduing the corners which might detract from the more important subject or performer near the center. The cel-

luloid masks, referred to in previous issue, are often admirably adapted to this purpose.

Metol Substitutes

About a year ago both the Eastman and the Ansco Companies analyzed a number of the metol "substitutes" then on the market at from three to forty dollars per pound. The "active" developing agents in some of these were wonderful—and terrible—to contemplate. Among other components, actual analysis disclosed cane sugar, casein, silica, table salt, and starch.

One developer, selling for more than thirty dollars per pound, was found by the Research Laboratory of the Eastman Kodak Company to contain ten per cent metol, sixteen of hydroquinone, thirty of sodium sulphite, thirty-three of cane sugar and eleven of other useless constituents. Thus, in this particular substitute the real developing agents sold for about four times their market price. Three others contained sugar in proportions of from thirty to fifty per cent, another contained forty per cent of cooking starch, and yet another contained thirty-six per cent of table salt and a little pyro.

Speaking of pyro, if one must use a substitute for the more convenient metol-hydroquinone developer, why not pyro? Pyro has been for years, and still is, the lowest in price of the real un"substituted" developers. Pyro will give results with a slightly shorter exposure in the negative than will metol-hydroquinone, and pyro is less sensitive to change in temperature. Properly handled, pyro will give good color in either negative or positive film. We have developed both in pyro and secured results that cannot be distinguished from metol-hydroquinone. We have even used it in developing paper prints without stain.

Within the past few months, however, there have been placed on the market a number of metol substitutes, guaranteed by responsible firms. In practical use, many of these substitutes give results that are all that can be desired. Some of these work somewhat more slowly than metol and require the addition of sodium hydroxide or caustic soda in small amounts. Most of the larger laboratories that do not have ante-bellum supplies of metol are now using one or the other of these metol substitutes with satisfactory results, though not always with the same formulæ as previously used for metol. Of course, hydroquinone, now quite reasonable in price, is usually employed as the other developing agent.

Something About Mats and Irises

The following incident, one that recently came to my attention, suggests that a few words concerning mats and irises might be of value. A certain cameraman, being in a hurry, put his iris-fade-out in front of his seventy-five millimeter lens, using the same barrel as he had been accustomed to employ with his fifty millimeter lens, and went ahead. He took it for granted that the results would be about the same, using the same Bell & Howell camera, same barrel, similar set-up, lens aperture, etc., and did not take time to focus upon the ground glass. The result, unfortunately, was a thin, almost useless negative, entirely devoid of any image of an iris in the picture. It happened that the extension tube for using the iris on the fifty millimeter lens was of such length that neither the usual effect of a before-the-lens iris nor the advantage of a smaller stop within the lens, was obtained.

Evidence of this tendency can be observed by placing a circle fade-out iris rather close to the lens with a fairly large opening in the latter. Closing down the circle of the fade-out, it will be seen that not only does its image become smaller, but the brilliancy of the picture within it becomes less. If it were mechanically possible to place the front iris within the lens, its effect would be the same as that of the iris diaphragm forming the "stops" of the lens. On the other hand, as the fade-out iris is moved away from the lens, the image of the circle becomes smaller and sharper.

In fitting an iris fade-out, care should be taken to see that it does not approach that point where it acts as a lens stop on the one hand, or a diffused image on the other.

In Passing

Down in the lower left hand corner of the first page of this department last month there is a sentence reading: "These halations etc., etc." This should read: These relations are not mere "theories"; they exist and influence our results whether or not we thoroughly understand them. In the middle of the second following sentence the words "from it"; have no place. Getting my MSS. into the editor's hands at the last moment seems to be conductive to mistakes.

OUR BOOK SHELVES

"Tree Wounds and Diseases"

This book, with a subtitle, "Their Prevention and Treatment" is the work of A. D. Webster of Regent's Park, London, a man exceptionally qualified by years of practical work and observation. As author of "Practical Forestry" and like works, his name is too well known to require further assurance of his capabilities. The volume is a handsome octavo carrying thirty-two full page plates and numerous other illustrations. In addition to a special chapter on fruit trees the text deals with decaying trees, hollow trunks, support of heavy and diseased branches, injured bark, pruning, injuries from fungi and insects, injuries from animals and birds, preservatives and materials, and the like. The work is complete and the instructions given thorough and in accordance with the most modern practice of the experts in this line. Published by J. B. Lippincott Company, East Washington Square, Philadelphia. Price two dollars and fifty cents net.

"Chemistry For Photographers"

This work, by William R. Flint, is one that should be in the hands of every photographer who wishes to avail himself of the advantage to be derived from an understanding of the underlying laws of photo-chemistry. The relationship existing between chemical reaction and the behavior of the formulas used in practical photographic processes is brought out in such a way that the reader is given a grounding that makes the understanding of the various steps of the several processes quite easy and simple. The different chemical reactions are first discussed, then light and chemical reaction in connection therewith, and finally an explanation of the chemistry involved in developing, fixing, toning and the many other photographic processes. The book is well printed and bound, gold lettering on red cloth making it a handsome volume. Copies can be secured from American Photographic Publishing Company, 221 Columbus Avenue, Boston, Massachusetts. Price two dollars postpaid.

"How To Make Enlargements"

This is the fifth of the practical and helpful photographic handbooks known as the Practical Photography Series. In addition to describing the various forms of apparatus obtainable on the market, instructions are given for the building of several types of enlargers at home. While the book is not a bulky one, it seems that the author has neglected no part of his interesting subject and he has managed to cover the field in a way that is most gratifying to the worker seeking for straightforward information. As with the companion volumes, this one can be had in either paper or cloth binding, the price being twenty-five cents and fifty cents respectively. Obtainable from most dealers or from the American Photographic Publishing Company, 221 Columbus Avenue, Boston, Massachusetts.

"The Spell of Scotland"

In this, the latest of the well known "Spell Series", Keith Clark, who is also the author of the volume dealing with Spain, has given us one of the most interesting and illuminating of books. The writer, with a style that adds much to the interest of his story, entertains and instructs the reader with a charming account of the people, their country, their history, and the unlimited possibilities that his theme affords. His story takes the form of a series of trips here and there, much as any visitor would be pleased to indulge his fancy had he the same appreciation of the best plan to follow in so doing. An intimate knowledge of the country, together with a love for it and its traditions, precludes any possibility of the writer being other than entertaining, were such a danger possible in Mr. Clark's case. To know Scotland intimately, and well, one

cannot do better than to read this book. The volume is uniform with others of the series, cloth bound in gold and color, an excellent map, a wealth of full-page illustrations with not a few in colors, making over three hundred and fifty pages. Published by the Page Company, 53 Beacon Street, Boston, Massachusetts. Two dollars and fifty cents, net. Postage, twenty cents.

"Advertising By Motion Pictures"

Ernest A. Dench, the well known authority and writer on the subject of motion pictures and their production, has just given us a book bearing the above title and dealing with business-getting publicity methods based on the use of motion pictures. The business man, be he retailer or manufacturer, will find the book an interesting and instructive one, moving pictures bidding fair to assume an important position in the advertising field at an early date. Mr. Dench covers the subject most thoroughly; and, as the moving picture is already proving itself both a popular and an effective means of advertising, the book should make a wide appeal and enjoy a large sale. It is published by the Standard Publishing Company, Eighth and Cutter Streets, Cincinnati, Ohio, price one dollar and fifty cents postpaid.

CLUB NEWS AND NOTES

Club Secretaries and others will oblige by sending us reports for this Department

Chicago Camera Club

The January bulletin of the Chicago Camera Club announces an interesting program for its regular Wednesday evening meetings. This includes a talk on "Putting Interest in Pictures", by Mr. W. H. Wisner of the Art Department of the *Herald,* a talk on photo engraving by Mr. O'Neill, followed by a visit to the workrooms of the Barnes Crosby Engraving Company, a discussion on members' prints, final selection of lantern slides for interexchange set, and the regular business meeting for the last Wednesday evening followed by a review of current numbers of photographic magazines. The officers of this enterprising club are putting forth their best efforts in behalf of the members and as visitors are cordially welcome at these meetings, a good attendance and interest in club affairs should follow.

In Path of Padres

An illustrated lecture on the "Path of the Spanish Padres" was given last night by Frederick Munson, F. R. G. S., at the home of Captain and Mrs. Randolph Huntington Miner, No. 649 West Adams Street. Mr. Munson showed many interesting views of the pueblo country of New Mexico and Arizona. His journey, as shown by the pictures, was as nearly as possible a retracing of the pathway of Coronado. The lecture was under the auspices of the Los Angeles branch of the American Archæological Society.—*Los Angeles Times.*

Picturesque Buffalo

From the *Buffalo Evening News* we learn that our good friend W. H. Porterfield, the pictorialist of that city, is, through an exhibition of his work at the galleries of the Guild of Allied Arts, showing his fellow citizens the beauties of their own city and its surroundings. Even were we not acquainted with the high pictorial quality of Mr. Porterfield's work, we could believe from the extended notice given, that the exhibition is a remarkable one and one that reflects great credit upon the artist responsible therefor.

Illinois College of Photography

Dr. D. W. Parkinson, Ex-President of the Southern Illinois State Normal School at Carbondale, visited the College on a recent professional trip to Effingham, and was well pleased with the equipment and with the work done by the students.

We note that Hon. Charles D. Gallagher, of Ely, Nevada, Assemblyman from that district, is in the field for re-election. Mr. Gallagher was formerly Superintendent of the Colleges, and it seems that he is making a success of politics, as he has of photography.

INTERNATIONAL PHOTOGRAPHIC ASSOCIATION

Officers of the I. P. A.

F. B. Hinman, President, 1369 South Washington St., Denver, Colo.

J. H. Winchell, Chief Album Director, R. F. D. No. 2, Painesville, Ohio.

Fayette J. Clute, General Secretary, 413-415 Call Building, San Francisco.

Charles M. Smythe, Director Post Card Division, 1160 Detroit St., Denver, Colo.

James B. Warner, Director, Stereoscopic Division, 413-415 Call Building, San Francisco.

George E. Moulthrope, Director Lantern Slide Division, Bristol, Conn.

Edward B. Cowles, Secretary Lantern Slide Division, 11 Oak St., Bristol, Conn.

NEW MEMBERS.

4285—J. F. Carrigan, Box 554, Clifton, Ariz.
3¼x5½ and 4¼x6½, various papers, of mountains, streams, beaches, snow and landscapes; for views and things of general interest. Class 1.

4286—John J. Lee, Box 856, Ashtabula Harbor, Ohio.
Any size up to 5x7, various papers, of marines, boats, docks, coal and ore loading and unloading machinery, etc.; for any interesting subjects, figure studies, etc. Class 1.

4287—J. A. Cornish, 203 Spadina Ave., Toronto, Canada.
1⅝x2½, 2¼x3¼, 3¼x4¼, and post cards, developing papers, of figure studies, child studies and local views; for figure studies and bathing scenes. Class 1.

4288—E. O. Hoffman, North Liberty, Ind.
Class 3.

4289—I. M. Runyon, R. F. D. No. 4, Box 62, Greencastle, Mo.
Class 2.

4290—S. J. Jarvis, 281 Bank St., Ottawa, Ont., Canada.
Class 3.

4291—John R. Palmer, St. Johnsville, N. Y.
Class 2.

4292—Morgan Bryant, Creek, Tenn.
3¼x4¼, finished on post cards, developing paper, of landscapes, animals, pets, portraits, etc.; for photos of thorobred stock, pets, pretty views, or anything of real interest. Prints only desired 3¼x5½ or smaller. Class 1.

4293—M. L. Munson, Nashville, Mich.
Class 2.

4294—C. O. Diggs, R. F. D. No. 2, Lyndon, Ohio.
3¼x5½ and 5x7, developing papers, of landscapes, farm scenes, and still life; for landscapes and farm scenes. Class 1.

4295—Cleo Frye, P. O. Box 3, Berlamont, Mich.
3¼x4¼, 2¼x3¼ and 1⅝x2½, developing papers, of buildings, and individual persons, also nature pictures; for buildings and nature pictures. Class 1.

4296—Jesse B. Hastings, Stony Point, N. Y.
Class 2.

4297—Robert P. Dexter, 302 S. East St., Coudersport, Pa.
3¼x5½, 5x7 and smaller, various papers, of miscellaneous subjects; for the same. Class 1.

4298—Kate M. Butterfield, 2600 Center Ave., Bay City, Mich.
3¼x5½ and 5x7, developing papers, of mountain views, woods, waterfalls, animals and Yosemite Valley; for ocean views, clouds or any interesting view. Class 1.

4299—C. F. Rodgers, D.D.S., Box 296, Conneaut, Ohio.
Class 3.

RENEWALS.

161—F. W. Sutton, 205 17th Ave. East, Hutchinson, Kans.
Will exchange 8x10 game study for game study. This is a rabbit and five ducks mounted in an oval. Write what you wish to exchange first. Class 1.

777—Herbert R. Gregg, Oroville, Wash.
Class 2.

2009X—Dr. Chas. F. Meacham, Bellows Fall, Vt.
Class 1.

2482—John W. Kimball, Windsor, Vt.
5x7 and post cards, developing papers, of rivers, lakes, brooks, mountains, country road scenes, landscapes, etc.; for views of scenery, nature studies, draped and nude studies. Will send out only good work and expect the same. Class 1.

2565—E. V. Bargamin, Elk City, Idaho.
Stereos and post cards of nature studies; for the same. Class 1.

2773—John L. Maloney, Box 56, Missoula, Mont.
Class 2.

2858—H. M. Sutton, Hazel Mines, Van Horn Texas.
Stereoscopic prints exclusively, various papars, of landscapes and mountain views in United States and Canada; for similar subjects. Stereoscopic prints only. Class 1.

3254—Vernon W. Hutchins, 39 Academy Sq., Laconia, N. H.
Class 2.

3255—A. M. Sutton, 175 So. First St., San Jose, Cal.
Class 2.

3721—W. T. Wright, 594 Carroll Ave., St. Paul, Minn.
Exchange lantern slides unmounted of Switzerland, Italy and ocean scenes, also England; will also exchange colored slides; also 3¼x4¼ to 5x7 of scenes all over the world in developing paper or post cards; good work guaranteed. Class 1.

3976—Chas. C. MacKay, 111 Beck Ave., Waterloo, Iowa.
Class 2.

4009—H. J. Gergen, Escondido, Cal.
3¼x5½ of locomotives and generai scenes; for the same. Class 1.

4022—V. E. Fowler, Box 919, Portsmouth, Ohio.
5x7, developing papers, of figure studies, nude and draped; for the same. Class 1.

4172—J. C. Flint, 687 61st St., Oakland, Cal.
3¼x4¼, 3¼x5½ and 4x5, developing papers, of woods, P. P. Int. Exposition, marine views, architecture and San Diego Exposition; for woods, marine views, mountains, and historical buildings. Class 1.

4184—B. F. Loomis, Anderson, Cal.
Class 3.

CHANGE OF ADDRESS

2151—Pres Fidler, 1351 East 38th St., Oakland, Cal.
(Was Westwood, Cal.)

4272—M. C. Nording, Bostwick, Fla.
(Was Waukegan, Ill.)

NOTES AND COMMENT

A Department Devoted to the Interests of our Advertisers and Friends
In it will be found much that is new and of interest

Reported By William Wolff

The Halverson studio, Vallejo, has been taken over by Carl Broden.

A. V. Richardson is opening a postal studio on Broadway, Oakland.

Mose and Mrs. Mose Grady spent January in San Francisco, after putting in a year in Bakersfield at the Hartsook studio.

John Smith of Hirsch & Kaiser went to Canada to spend the holidays with his family.

Messrs. Linsay and St. Clair of Ansco fame were in San Francisco during the holidays.

F. C. Lee, Fresno's leading photographer, was in San Francisco during January.

The nineteen seventeen annuals are going fast. Have you secured yours?

Fred Seyler, the ever welcome Taprell, Loomis salesman, is on the coast again.

Clarence Defrees of the Davies studio, Portland, reported a big holiday trade.

W. H. Schulze, formally with Burr McIntosh has taken over the management of the Bushnell studios, considered the most beautiful on the coast.

Herbert Small, Pty. Ltd., Melbourne, Australia, with branches at Sydney, Adelaide and other principal cities, have made arrangement with Messrs. Wolff & Dolan to act as distributors for Probus Preservative Paint and Probus Print Lustre in the Antipodes. The manufacturers consider themselves extremely fortunate, as with these connections they will be enabled to give more efficient service to the increasing list of West Indian and New Zealand users of their products.

Mr. Lipman Makes a Change

A. Lipman, so long and favorably known as manager of the photographic department at the Emporium, has taken a position with Henry Kahn & Company, the well known dealers in photographic and optical goods. The latter firm has opened a new store at 54 Geary Street, where Mr. Lipman will be located, and as the location is an excellent and an easily accessible one, a good business is assured.

"Every Click a Picture"

This is the new slogan adopted by Burke & James, Incorporated, intended to apply to their three products alike, Rexo Cameras, Rexo Film and Rexo Paper, three products having a quality that should enable them to live up thereto if given half a chance. The firm has gotten out a handsome little booklet describing the five important new features

incorporated in the Rexo Cameras and this they are glad to send free to any of our readers who may be interested. The Rexo Finder has special features that appeal, the spool chamber makes loading easier and more sure, the focussing device has micrometer exactness, while an extra plate inside the camera back insures a flat surface to receive the image. The demand for Rexo paper is taxing the capacity of the factory to the limit, while Rexo Film, now that new machinery has been installed to enable a much larger output, will be supplied promptly and fully. This film has speed and the resultant

negatives are characterized by a snap and brilliancy that gives printing quality of most gratifying kind. Being rich in silver, these characteristics are marked, while the non-halation and orthochromatic qualities are also of the highest. A trial of either Rexo film or paper is worth one's trouble and both products will give an excellent account of themselves in actual use.

Pirie MacDonald Says:

"Yes, I have used the Cooper Hewitt light from the time it first came out. I used it exclusively, as I prefer it to daylight in every way. I draw these shades during the sittings, so as to entirely eliminate daylight;" he pointed to the ordinary opaque green shades at the several windows in the room. "I found long ago that I could get all the effects with Cooper Hewitt light that I could get with a skylight, and get them invariably. You can see for yourself,"—and he swept with his glance the three sides of the room which were hung with examples of those wonderful life-like portraits that have made the name of Pirie MacDonald known wherever photographic art is appreciated. Following his suggestive glance, I recognized the faces of men prominent in their various walks of life. In each case the portrait, like the subject, was a distinct, impressive personality. There was no attempt at flattery, at idealism. "But this does not preclude a wide scope of artist's treatment. Here, for example, the modeling is rugged and bold,—a vigorous lighting; while in this, the soft gradation of half-tone is the keynote. Here is a lighting that was once almost a fad,"—indicating a striking Rembrandt effect.—From "An Interview With Pirie MacDonald", by *William C. Hubbard.*

Well Worth Having At Hand

Through the courtesy and kindness of G. Archer Lindsay, the genial Ansco representative, down from the Northern Coast for a short vacation, a number of very interesting booklets reached our desk. These are gotten out by the Ansco Company, not only as advertising matter but to help and assist those using their products. Incidentally, the information given is of value to others as well and we have recently answered not a few of the questions that reach us daily by referring to the pages of these helpful little manuals. "Cyko Prints" is given up almost entirely to valuable information, the directions for double printing and the production of tinted borders being particularly clear and instructive. "Professional Cyko Pointers" is perhaps less comprehensive but it contains much that is of the greatest value to the professional worker. The "Speedex Film" booklet follows the lead of the two just mentioned, going particularly into that trying subject, the correct exposure for different interiors. The Ansco catalogue is a handsome one with a cover illustration reproduced from a salon picture by one of our best known pictorial photographers. These several booklets together with less pretentious printed matter covering the several products of the firm can be obtained free from all Ansco dealers or by addressing the Ansco Company, Binghamton, New York.

Notes From Sacramento

Bert Hodson, the popular photographer who has been located in a ground floor studio on K Street for so many years, has moved around to the Eighth Street side of the Clunie Building, where a handsome studio and reception rooms have been fitted up, again on the ground floor.

Dean Burley, who is in charge of the Bushnell gallery, reports an exceptionally fine holiday business with every prospect of increased business for the new year.

The pioneer photographer, J. E. D. Baldwin of the Rembrandt studio, also reports good business and he seems well pleased with the change in location from the opposite side of the street.

George Knox has opened an X-ray laboratory in connection with his photographic supply business and reports considerable work in that line.

The McCurry Photo Company has done its usual large amount of commercial and view work during the past year and the firm anticipates even greater demands upon their services during the coming year.

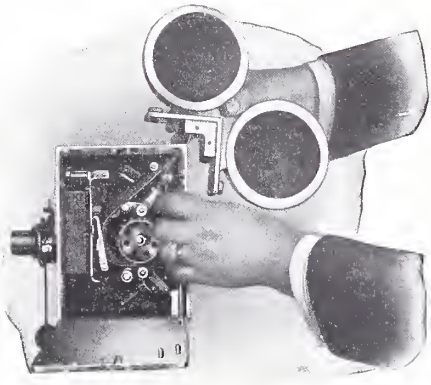
Ing & Allee, Kimball, Upson & Company and the other stock houses all report an excellent business for this season of the year.

Ben Lyle of the Defender Photo Supply Company spent several days in Sacramento early in January and reports satisfactory business for his firm.

A New Motion Picture Camera

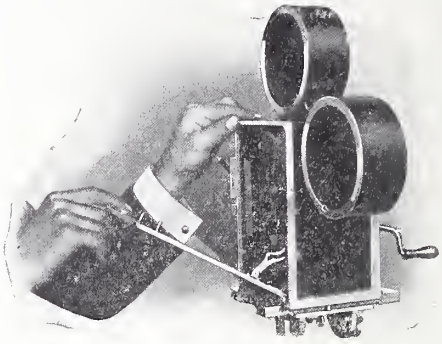
We have just received a copy of the attractive new illustrated catalogue describing the new Simplex Motion Picture camera just placed on the market by the manufacturers of the Alamo, which last, it will be remembered, received the gold medal at the Pan American Exposition in 1915. This new camera is constructed entirely of metal, with the working parts all of high grade brass

and steel. It is furnished with reels to accommodate either two or four hundred feet lengths of film, and these, being on the outside of the camera proper, permit of either size being used with the same camera. These magazines have an automatic device which closes the opening through which the film passes, the instant the camera is opened;

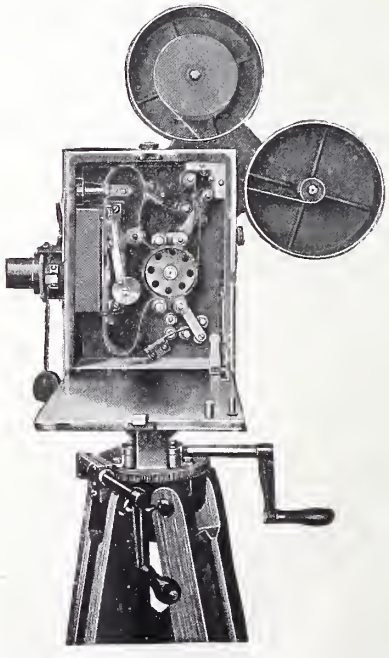


and, closing the camera door automatically opens this passage and allows the film to pass freely.

A distinctive feature of this camera is the extreme ease and quickness with which the film may be threaded, the operation requiring but a moment's time, and is done after the film has been connected to the take-up reel. The reproductions herewith show, respectively, the camera in use; the loading of the film; a back view showing method of opening; and, the complete mechanism with film



ready for operation. This is said to be the first American made motion picture camera of the very highest type of efficiency, selling at the popular price of two hundred and fifty dollars, complete with two hundred foot reels; or two hundred and seventy-five dollars complete with four hundred foot reels. One of the first models was sent to Chicago to be demonstrated before the managers of the



different film companies, and all accorded it the highest praise and expressed surprise at its being sold at so low a figure.

The complete Simplex catalogue, describ-

ing fully all models of their motion picture cameras and apparatus as well as the now famous Northern Lights and Multiflex Reflectors and Enlargers, will be mailed on request. We advise our readers to send for a copy today, addressing, The Simplex Photo Products Company, Richmond Hill, Long Island, New York.

Mr. Dawes' Assistant

E. L. Hamilton, for some four or five years connected with the Kansas City Photo Supply Company, has been appointed Assistant Manager of the Promotion of Trade Department of the Wollensak Optical Company of Rochester, New York. His work will consist mainly of traveling through the Middle and Far West, in the interest of the Wollensak Optical Company, Mr. Dawes, Manager of the Department, being compelled to spend the major portion of his time in Rochester as pressure of business there demands his presence. Mr. Hamilton is well versed in the photographic business, is wide awake and progressive, and these, together with his geniality, should make him a most welcome visitor wherever his path should lead.

"Browning's Magazine" Monthly Competition

Browning, King & Company, as no small part of our readers are doubtless aware, maintain large retail clothing stores in seventeen of the leading cities in this country. They publish a handsome and most entertaining little monthly entitled *Browning's Magazine,* in which one of the features is a department entitled "The Amateur Photographer". In connection with this last there is a monthly print competition with awards of five, three and two dollars, the prizes being awarded more on a basis of popular interest than on the more expert technical achievements, the idea being to interest the beginners and the younger amateurs. The magazine is sent without charge to those dealing at one of their seventeen retail stores, who desire it. To others a nominal charge of twenty-five cents is made to cover the postage. Such of our readers who reside in or near a city in which is located one of the Browning, King & Company stores should avail themselves of the opportunity, and those not so fortunately situated will not regret the expenditure of twenty-five cents for the magazine which can be secured by sending that amount to, Publication Department, Browning, King & Company, 16 Cooper Square, New York.

"Tabloid" Brown Toner

Burroughs, Wellcome & Company are now issuing a special formula under the name of "Tabloid" Brown Toner for the purpose of toning sepia prints on bromide or gaslight papers to the colder richer brown which is preferred for certain subjects. It is also suitable for use with sepia-toned lantern slides. These "Tabloids", which come in bottles of twenty-two, we have tried out and find excellent. The process is very simple. Take a print or slide previously toned with the sepia toner and immerse it in a solution of one "Tabloid" Brown Toner in one ounce of ten per cent hypo solution. The warm sepia changes first to a cold brown and finally to a rich brown black. Time of immersion, two to ten minutes, according to tone desired. After toning, wash in running water for thirty minutes. This formula will not tone black prints; it is for use with sepia-toned prints only.

A New Selling Arrangement

The exclusive wholesale selling agency for the products of the Universal Camera Company of Chicago has been taken over by Burke & James, Incorporated, 240 East Ontario Street, Chicago. This arrangement we understand was consummated only after a most searching investigation into the merits of this Universal Camera for motion photography. Among the users of this camera they found many of the most prominent motion picture men and large institutions such as the Selig-Tribune Weekly, the Herald Weekly, and they also found it being used to no little extent in Europe. One of the great advantages of this camera is the quickness with which it can be set up and operated enabling the user to, as one of them expressed it: "Get the picture and get away before the other fellow gets set up". As the wholesale selling agents, this firm has in this camera an excellent proposition for both photographic and motion picture supply dealers and one that should be looked into by such firms. A very handsome and instructive catalogue is available and the merits of this camera should be investigated by intending purchasers of such an instrument.

CAMERA WANTS

Advertisements of the above nature shown below will be inserted under this heading at the rate of fifty cents each insertion, for twenty-five words or less; each additional word, two cents extra, cash with order. Those of positions wanted inserted free. No business advertisements accepted.

WANT SALESMEN For our advance slides of motion picture stars. No investment required. Percentage basis. All time or side line. Frank B. Howe, 6822 Sunset Blvd., Los Angeles, Cal.

PHOTO STUDIO For sale. Up-to-date, in the very heart of business district, county seat of 4200 people; only studio in the county in the heart of gold fields of California, money plentiful, established 30 years, modern equipped. Would consider exchange for city not less than 15,000 people. Bankable security accepted. Live town for live man, number of small towns to draw from to 2000 people. Price $700.00. Let me hear from you immediately. Erik's Studio, Jackson, Cal.

WANTED Pair of condensing lenses 9 inches or larger. Must be in perfect condition. State price. Address Sno, Box 298, Modesto, Cal.

SALE OR EXCHANGE Burke & James Ingento No. 45 Enlarging camera, list $65.00, sell for $30.00, good as new; or will exchange for Goerz Dagor lens series 3 No. 2, 7 inch focus. Address F. M. K., care "Camera Craft", San Francisco, Cal.

WANTED TO BUY Studio in good town of not less than 1500 population. West or Northwest preferred. State price and give particulars in first letter. R. Linstad, Ambrose, No. Dak.

WANTED Pair 10 inch condensing lenses, mounted. State price and condition. The Midzuho Company, 1639 Post St., San Francisco, Cal.

WANTED 5x7 view camera, standard make fitted with high speed anastigmat lens; also professional enlarger with or without lens. W. C. Gowin, Watertown, So. Dak.

POSITION WANTED By expert retoucher and finisher. Best of references. Address R. F., care "Camera Craft", San Francisco, Cal.

FOR SALE No. 9 portrait Unar, 10x12 Ross Homocentric, 8x10 Velostigmat, 5x7 Hall Reflex with f:4.5 lens, 3A Special Kodak Zeiss lens, 5x7 reversible back Reflex, f:6.3 lens, 6 holders, case. Sacrifice for cash only. For particulars apply Jack Wirtz, 3013 Bryant Ave. South, Minneapolis, Minn.

WANTED First class printer for professional and amateur printing. State salary and experience in first letter, also send photo. N. Reiman, 531 East Main St., Stockton, Cal.

FOR SALE Cheap or exchange Eastman 5x7 plate tank, Thornton and Pickard 2 and 4 inch shutters, 8x10 Seneca camera, R. R. lens, Auto shutter, new 5 foot 8 inch Cirkut printing frame, set one inch Nehring's supplementary lenses, new Wold Air brush model N, 4 inch Silent studio shutter, large Parallax reflector and small electric fan. Good kodak wanted. H. Gunther, 1327 O'Farrell St., San Francisco, Cal.

POSITION WANTED By a young lady as retoucher or assistant in a good studio; graduate of Illinois College of Photography. Samples of retouching sent upon request, prefer Middle or Western States. Address E. G., care "Camera Craft", San Francisco, Cal.

FOR RENT The best appointed photograph gallery in Texas; best location; established over 10 years; modern in every way; only first class artist need apply. R. M. Mothner, Beaumont, Texas.

POSITION WANTED As photographer, home portraiture or out-of-doors, manager of amateur finishing department or salesman in photographic supply store; 12 years' experience; hot climate preferred. Address W. P., care "Camera Craft", San Francisco, Cal.

FOR SALE Studio in an Iowa town of 20,000 population; good surrounding country and a fast growing town. Over three-quarter-million dollars' improvements the past year. Doing a good business, good reason for selling and will sell at a bargain. For particulars address Ora D. Church, Sioux City, Iowa.

FOR SALE One ounce each Hauff's Amidol and Agfa Metol—both for $5.00 C. O. D. Ernest Smith, Ford City, Mo.

POSITION WANTED By all-round photographer, experienced in all branches of work; best of references. H. B. K., care "Camera Craft", San Francisco, Cal.

FOR SALE Investigate. Must get outside this summer, attractive studio, main street, ground floor, good prices for high class work; one other small studio, no competition on high class work. Population 6000, fine climate and scenery, health resort. Studio invoices $1,200.00, December business over $800.00. Will take out $400.00 worth of cameras, lenses, etc., if you wish and sell for $400.00. Possession April 1st. This is a genuine bargain, you must act quick. Address Studio Ashland, Ashland, Or.

FOR SALE 3¼x4¼ German Ica roll film, takes plates, Carl Zeiss Tessar, Compound shutter, list $62.00, French tripod, list $6.00, sell for $40.00. Address C. H. O., care "Camera Craft", San Francisco, Cal.

RETOUCHING Send your negatives to us for retouching that will please. Sample negatives retouched for thirty cents. Woodward Portrait Studios, 1013 Nicollet Ave., Minneapolis, Minn.

FOR SALE Ground floor studio, fully equipped, good business, nice town; good reason for selling for half its value; no competition; dairy and fruit country. H. A. Bliler, Fortuna, Cal.

FOR SALE Studio with established trade paying a good profit every month in the year. Over thirty years in present location which is best in the city. Have purchased other and larger business and must sell. Price $900.00 cash. Write Hermon Pfell 21 Main St., Champaign, Ill.

FOR SALE Studio in a mining camp of 5000 inhabitants, payroll $120,000.00 per month, exclusive franchise, ideal climate for health seeker, will teach the profession to the purchaser if necessary on a percentage basis. Enclose a self-addressed stamped envelope for reply. Address R. S., care "Camera Craft", San Francisco, Cal.

WANTED TO BUY A well established and equipped studio in California town not under 15,000 population. Price and terms must be right; will also consider renting good studio with privilege of buying. Address R. E. C., care "Camera Craft", San Francisco, Cal.

WANTED A-1 lady retoucher. Also to operate finish and take charge of studio. Steady work, new modern studio. Ground floor. Send samples of your own work, photo of self and state experience. Give full particulars and salary expected. Am married, family of four children. Address The Stine Studio, Worland, Wyo.

CAMERA WANTS—Continued.

PHOTO STUDIO For sale in San Francisco, good light, equipment, low rent, doing good business, owner to leave city. Address A. K., care "Camera Craft," San Francisco, Cal.

WANTED TENAX 4x6 equipped with f:4.5 lens. State condition and price. Address Tenax, care "Camera Craft", San Francisco, Cal.

POSITION WANTED By a first class all-around commercial photographer. Is open for engagement and understands the business thoroughly; capable of taking full charge of plant; especially fine at flashlight operating. No objection to leaving San Francisco. Address Commercial Photographer, care "Camera Craft", San Francisco, Cal.

FINEST STUDIO In San Francisco, established 20 years, can be purchased at a great sacrifice, by responsible party who can show good financial rating. This is an exceptional proposition of a very high class order. The business averages $30,000.00 yearly and no tickets or coupons have ever been handled. The price asked is such as to make this a decided bargain. Reason for selling given by letter. Address Box 44, care "Camera Craft", San Francisco, Cal.

WANTED Two 10-inch condensers, mounted. Bert Hodson, Sacramento, Cal.

WANTED First class enlarging lantern, prefer 5x7 B. & J. Ingento, perfect condition and priced right. I will sell high grade imported 3¼x4¼ camera using plates or film. L. S. Christison, Eugene, Or.

FOR SALE Leading studio in best city of Southern California, population about 45,000, established trade, doing between seven and eight thousand per year; modern building, everything first class. Other interests compel immediate sale. Address Box 22, care "Camera Craft", San Francisco, Cal.

WANTED Complete Self-Instructing Library of Practical Photography, ten volumes. State binding, condition and lowest price. Address P. R. S., care "Camera Craft", San Francisco, Cal.

POSITION WANTED By kodak finisher or quick finish postal man; best references. C. W. B., care "Camera Craft", San Francisco, Cal.

HIGH CLASS Violin fifty dollars or want enlarger, kodak printer, developing tank, or photo goods. Have fifteen jewel Elgin gent's watch for above. Frank Reeves, Stamford, Texas.

WANTED Studio in town of 1000 to 5000 without competition. Southern Wisconsin preferred. Address Lock Box 444, Warren, Ill.

FOR RENT From May 1st to October 1st, studio fitted with electric light, city water, living rooms in connection. Good German community. Will sell also. Box 74, Henderson, Minn.

POSITION WANTED By a young lady with some experience. Small wages to start. Best of recommendations. Address G. M., care "Camera Craft", San Francisco, Cal.

WANTED A-1 All-around workman, man with family preferred. Steady work, $17.50 per week with chance of raise if you can make good. Must be No. 1 operator, retoucher and finisher. New modern studio building, fully equipped. Good grade of work. Kodak supplies and finishing. Address R. H. Stine, Basin, Wyo.

FOR SALE The best studio in Southwestern Iowa. Ground floor, brick, building, corner location on good street in live town of 6000. Furnace heat, city water, gas and electric light. Fitted to 11x14. Photo of exterior, diagram of rooms and full description on request. Blackford Studio, Shenandoah, Iowa.

POSITION WANTED In Studio by young all-around workman and competent retoucher. Will start reasonable for a good permanent position. For full information address Victor Nelson, 1301 Seventh St. So., Minneapolis, Minn.

FOR SALE Studio in progressive county seat town in Southeastern South Dakota. Large territory to draw from. City water, steam heat, electric lights and up-to-date. Do not write unless you mean business and have some money to put into it. Address H. P., care "Camera Craft", San Francisco, Cal.

FOR SALE Up-to-date photo studio, building and lot in the best agricultural portion of Southwestern Minnesota. Have soft water in building and electric lights. Nearest competition 14 miles. Will sell cheap for cash as I am going out of business. Might give time for part of purchase price if needed, and might consider to exchange for land or small farm. If you have the money and mean business or have a small improved farm, write for full information to A. H., care "Camera Craft", San Francisco, Cal.

FOR SALE Ground floor studio in live town of 1000 in S. E. Iowa. Two railroads, high school. Best farming district of state. Doing good business, established over 30 years. Equipped complete up to 8x10, with first class outfit including 8x10 view outfit. Electric printer. Own building. Reason for selling, wife's health. Price $500.00. Write for further information to F. C. L., care "Camera Craft", San Francisco, Cal.

FOR SALE A 5x7 Graflex in first class condition. M. E. Lewis, 752 5th St., San Diego, Cal.

FOR SALE A well equipped studio in the best growing city of 50,000 in California, fine location, 3500 negatives. A bargain for a good workman, must sell quick as have other business. $500.00; if you want a bargain you will have to hurry. Address F. K. S., care "Camera Craft", San Francisco, Cal.

FOR SALE $35.00; 6½x8½ view camera with Wollensak convertible anastigmat lens, case and tripod. Snavely, 166 West 43rd Place, Los Angeles, Cal.

FOR SALE Leading studio in busiest town on Southern Pacific, half way between San Francisco and Los Angeles, population 6000, ideal climate, finest location in town; everything up-to-date, no junk, finest trade, best prices. Address E. C., care "Camera Craft", San Francisco, Cal.

FOR SALE Brand new No. 1 Special Autographic Kodak, Optimo shutter, f:6.3 anastigmat lens, long grain leather carrying case. Outfit cost $42.75, will sell for $32.00. J. A. Baughman, Pulaski, Iowa.

FOR SALE Korona viewing camera with Koehler f:4.5 lens in Acme Ilex shutter with full equipment; cheap for cash. Address Samuel J. Heaton, Ferris, Ill.

FOR SALE Studio in Milbank, So. Dak. County seat town of about 3000. Electricity and water. On second floor. For particulars, address the Kiel Studio, Milbank, So. Dak.

SALE OR TRADE Studio in live town in Southeast South Dakota, no competition, good business, for studio in Central Minnesota with modern studio outfit and building. Will stand investigation. $900.00 will handle it. Address C. G. W., care "Camera Craft", San Francisco, Cal.

FOR SALE Will sell my studio, business and building, or studio alone and rent building. County seat town 3700 population. Finest farming district in country and most beautiful location on the Mississippi River. We have the exclusive Eastman agency. A railroad town, good payroll. Don't bother me unless you have money, I'm busy. Address J. A. Bell, Wabasha, Minn.

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Eastman Kodak Company
ROCHESTER, N. Y., *The Kodak City.*

Fun "By Flashlight."

Unlike most reporters, the Kodak knows no quitting time. The paper never goes to press for the Kodak. It's always ready for the next assignment. It's particular business in life is to get the story anytime, anywhere and inasmuch as some of the best picture stories "break" after sun down, particularly at this time of year, the two Kodak helps that make such pictures possible, the Eastman Flash Sheets and the Kodak Flash Sheet Holder spring into prominence.

Eastman Flash Sheets are a dependable means of instant illumination burning with a soft, broad light that does not startle the subject and is accordingly well adapted to portraiture. The sheets are in themselves easy to handle but with the Kodak Flash Sheet Holder their use becomes simplicity itself. The operator has absolute control over his illumination and the interposition of the metal back of the holder between him and the flash is a convenience. The price of the Kodak Flash Sheet Holder is $1.00.

It's never too late to Kodak.

Flashlight work is a most interesting branch of amateur photography—*amateur* photography, no expert knowledge is necessary and even the novice has no difficult obstacles to overcome. In one important department, in fact, picture-making by flashlight has an advantage over daylight work. In the former the amateur can control his illumination not only as to direction but as to intensity.

In connection with flashlight work, a tripod will be found such a convenience that it is almost a necessity. There are tripods and tripods, but the one that can be most strongly recommended for amateur work is the Kodak Metal Tripod. All—metal construction insures rigidity and permits a compactness impossible in wooden tripods; and the light weight and ease of adjustment are additional features. The price of the Kodak Metal Tripod ranges from $2.25 to $6.00 according to size.

There is a little booklet, "By Flashlight", published by the Eastman Kodak Company, containing all the information necessary for succesful flashlight work, which you really ought to have in your possession. The matter is presented very simply and the text is made even more clear by numerous half-tone illustrations and diagrams. You can get this booklet at your dealer's—or we would be very glad to mail you a copy. "By Flashlight" is more than free—it will pay you to read it.

Eastman Kodak Company

ROCHESTER, N. Y., *The Kodak City.*

KODAK SAFELIGHT LAMP

The photographer in your town knows more about photography than you do. This is natural enough because you are an amateur and he is a professional. He makes photography his business and consequently his word in things photographic is authoritative and his choice of equipment, whenever it is applicable to amateur work, an invaluable guide.

In many an up-to-date photographic studio throughout the country there is a lamp in constant use very strikingly similar to the Kodak Safelight Lamp. In fact about the only difference is that it is larger. It is called the Wratten Safelight Lamp and the Kodak Safelight Lamp is an adaptation of it employing the same principle of indirect illumination and using Wratten Safelights. If you could button-hole these up-to-date photographers one by one and ask them to explain the presence of this particular lamp, they would be pretty sure to reply. "It's safe."

That's the whole story of the Kodak Safelight Lamp in a nut shell. "It's safe." It is one lamp that you can be sure about—a lamp that gives you all the illumination you want with all the safety you need.

The Kodak Safelight Lamp is made of metal neatly finished in brown, its very appearance bespeaking efficiency. The interior of the lamp is enameled white to intensify the force of the electric light from the bulb in the top. Electric current is, of course, required.

With the exception of electric bulb, the lamp is supplied complete, including safelight and four feet of electric cord with socket.

Kodak Safelight Lamp, $3.00

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This seal outside the container means that the chemical or chemical preparation inside is exactly what it should be—not only Eastman tested but Eastman *passed.*

EASTMAN KODAK CO.,
ROCHESTER, N. Y.

At your dealer's.

Eastman Kodak Company

ROCHESTER, N. Y., *The Kodak City.*

SNOW PICTURES

A good snow picture is prized by any amateur. He puts it right up near the front in his photographic collection so that you can hardly fail to see it. Winter furnishes material and to spare for really beautiful pictures. Branches heavy with snow, the ground a mass of white with the black of the tree trunks as contrast, here are scenes well worth portrayal. It takes a Kodak to take such pictures and it takes a Kodak Sky Filter to make the most of them.

With the regular lens equipment the beautiful detail of the snow is often lost in the print. This is because of the brightness of the light reflected by the snow which calls for a short exposure while the remainder of the landscape demands an exposure of longer duration. If we expose for the snow we lose something in the rest of the picture and if we expose for the rest of the picture and let the snow take care of itself it frequently refuses to do so. The Kodak Sky Filter, however, solves the problem. Clapped on over the lens, *with the yellow side down*, the glare from the snow is held back and a correct exposure for the winter landscape, not just a part of it, is the result.

The prime purpose of the Kodak Sky Filter, as its name indicates, is in photographing landscapes where the sky is to play an important part in the effect. The filter in this use, *with the yellow side up*, equalizes the difference in light between sky and foreground.

But it can do double duty and will be found an invaluable aid in the making of snow pictures.

The Kodak Sky Filter fits on over the regular lens equipment exactly as does the Kodak Portrait Attachment and may be slipped on or off in a twinkling. It is too small to be in the way and so may be conveniently carried on every picture hunt.

The price ranges from fifty cents to one dollar according to size.

BROWNIE ENLARGING CAMERA

It's as easy to make enlargements with this instrument as it is to make pictures with a Kodak.

THE PRICE

V. P. Kodak Enlarging Camera, for 3¼ x 5½ enlargements from 1⅝ x 2½ negatives,	$1.75
No. 2 Brownie Post Card Enlarging Camera, for 3¼ x 5½ enlargements from 2¼ x 3¼ negatives,	1.75
No. 2 Brownie Enlarging Camera, for 5 x 7 enlargements from 2¼ x 3¼ negatives,	2.00
No. 3 ditto, for 6½ x 8½ enlargements from 3¼ x 4¼ negatives,	3.00
No. 4 ditto, for 8 x 10 enlargements from 4 x 5 negatives (will also take 3¼ x 5½ negatives),	4.00

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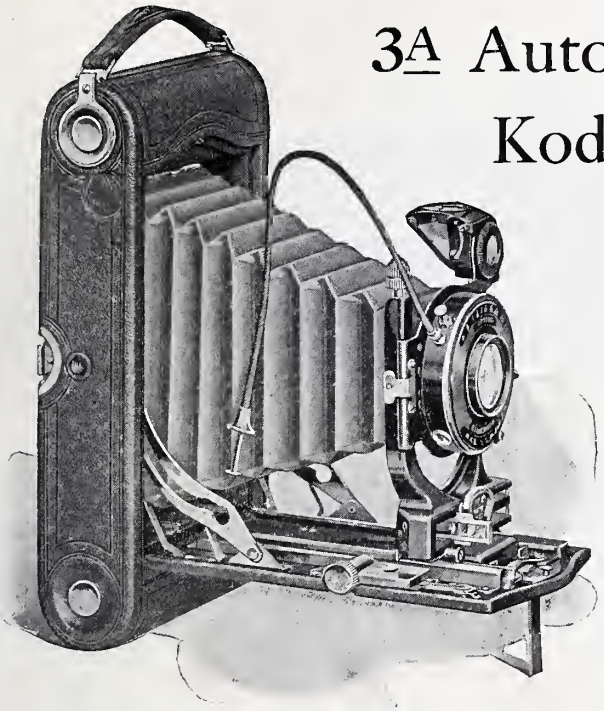

3A Autographic Kodak, Special

pictures,
post card size.

Hand camera photography has its ideal realized in the 3A Autographic Kodak *Special.*

Optical and mechanical efficiency resulting in a photographic fitness that the word "*Special*" can only indicate provides the advanced amateur with all that he could wish and offers to the novice practical features that he never knew existed.

THE PRICE.

No. 3A Autographic Kodak, *Special*, Kodak Anastigmat lens, *f*.6.3, 6¾ inch focus, and Optimo Shutter, . . $55.00

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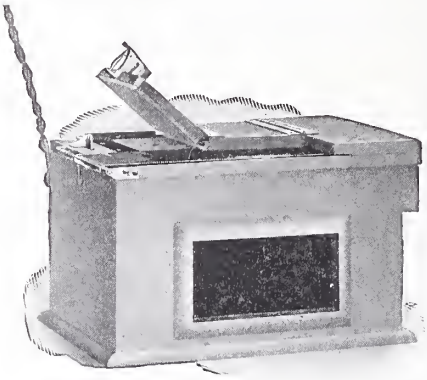

THE KODAK AMATEUR PRINTER

The convenience and efficiency of the Kodak Amateur Printer emphasize the pleasures of picture-making—a delightful phase of photography is made all the more delightful with this up-to-the-minute outfit as a printing ally.

THE PRICE.

Kodak Amateur Printer, - - - - $6.00

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At your dealer's.

With the ordinary lens equipment blue photographs light—yellow photographs dark.

With a

KODAK COLOR FILTER

these colors photograph much more nearly as they appear to the eye—yellow is recorded as a light color and blue as a dark.

The price ranges from $0.50 to $1.00 according to size.

EASTMAN KODAK COMPANY,
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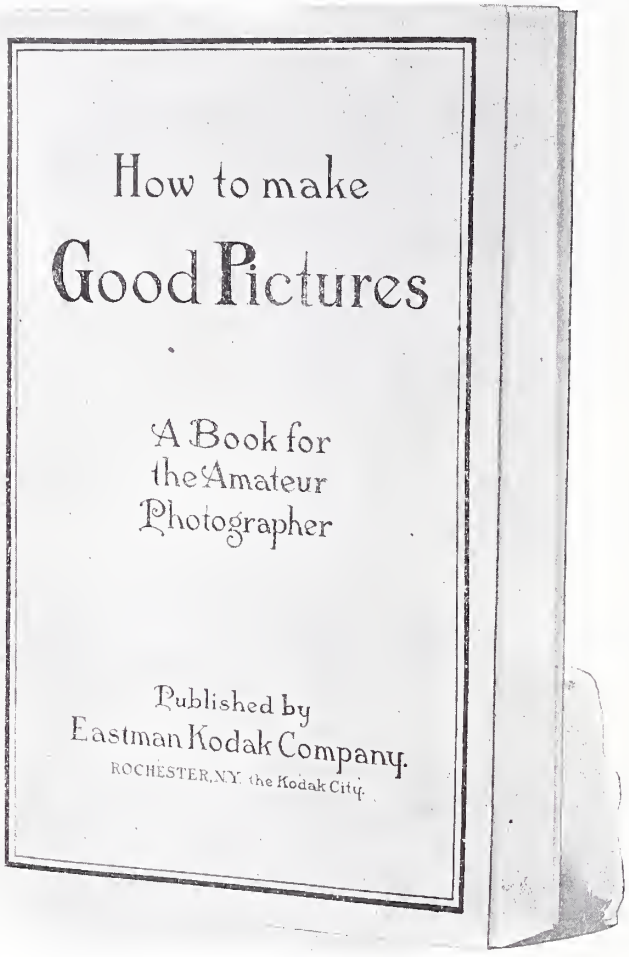

Photographic progress—the advance from the novice to the amateur class and from the amateur to the charmed circle of experts will be made more easily, more swiftly and with a gain in pleasure if this authentic guide is at hand for reference.

THE PRICE.

"How to Make Good Pictures," paper covers, . .	$ .25
Library edition, cloth bound, ...	1.00

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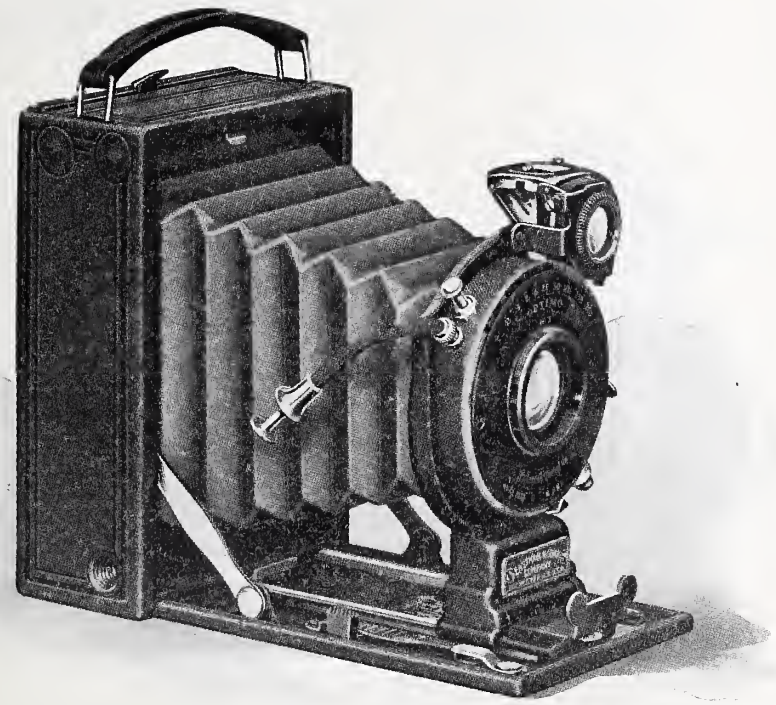
At your dealer's.

A camera that puts interest into the indoors



Premo No. 12

Carefully designed, cleverly constructed, this compact, ultra efficient camera offers exceptional advantages for indoor photography.

You can load it with films or plates — just as you choose, and it is provided with ground glass for focusing, so that you can compose and focus each subject with absolute accuracy.

Although but a trifle larger than the pictures it takes, it will accommodate lenses of any desirable type from the rapid rectilinear to the *f*.4.5 anastigmat, with high speed Optimo Shutter.

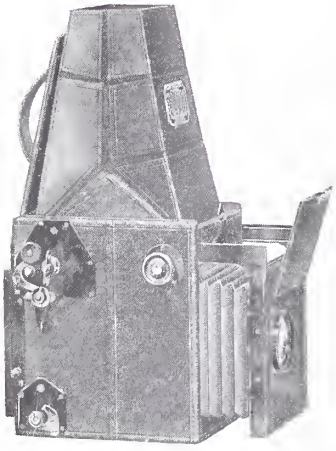
Prices, $15.00 to $56.00. Pictures, 2¼ x 3¼.

Premo catalogue free at the dealer's, or mailed on request.

ROCHESTER OPTICAL DIVISION

EASTMAN KODAK CO. ROCHESTER, N. Y.

The Revolving Back Junior



The Revolving Back Junior makes 2¼ x 3¼ pictures on roll film, plates or film packs. It is fitted with the Graflex Focal Plane Shutter operating at any speed from "time" to 1-1000 of a second. When you look in the focusing hood, you see the image right side up, the size it will appear in the finished picture, and this image remains brilliantly visible up to the instant of exposure.

The back of the camera revolves, enabling the user to make either vertical or horizontal negatives without turning the camera on its side

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Photo by W. F. Roberts Co.

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Series V Wide Angle lenses cover a circular field of 110°, of which about 70° is covered on the listed sizes. Each lens will therefore work on a size or two larger at smaller stops, an advantage of wonderful importance in architectural or interior wide angle work.

Volute Shutter, diaphragm type, will go between the lens combinations. The lens is a perfectly corrected anastigmat, and the price is within reach of all.

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Insure a Higher Percentage of Successful Pictures
With Any of The Famous

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ONE—The Rexo Framing Finder shows in miniature exactly what you will get in the finished picture—and nothing else. For vertical or horizontal use.

TWO—The Rexo Spring Plate Back holds the entire area of the exposed film in the exact focal plane—insuring sharpness all over the picture.

THREE—The Rack and Pinion Focusing Device aids accurate focusing. Microscopes and other instruments of precision have this device—so has the scientifically constructed *Rexo.*

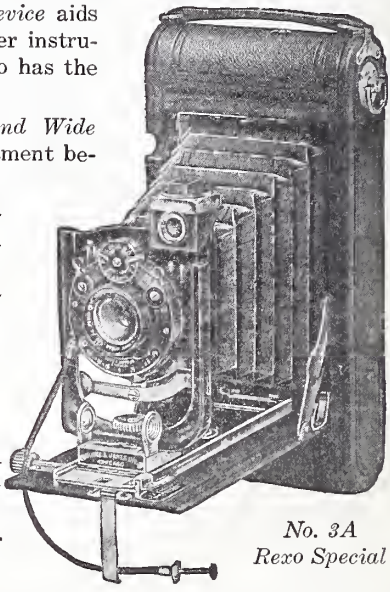
FOUR—U-Shaped Rigid Lens Standard and Wide Track mean permanent and exact adjustment between lens and film.

FIVE—New Rexo Spool Chambers which insure quick loading, protect your films from fog and add to the beauty of the camera.

These five great features can be had only in a *Rexo*—that's why its

"Every Click a Picture"

with a *Rexo*—a copy of a dandy booklet describing the *Rexo Photo Products* is yours for the asking. It tells the story of *Rexo Cameras, Film and Paper,* and shows the way to better pictures.



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Gentlemen:
Please send me ***free*** and ***prepaid*** your book on finger prints and particulars of your special limited offer.

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VICTOR FLASH POWDER is to-day successfully used for illuminating all classes of inside work from a portrait of "Baby," to a negative of a National Convention.

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The Convertible Turner-Reich Anastigmat F 6.8

Is As Good a Lens As Your Money Can Buy

Consider these two statements and you can have the reason why this lens should be your first choice. You do not want a lens with air spaces to impair the definition and lose light from reflection. You do not want a lens with only one focal length when you can get one with three. You certainly do want a lens optically and physically perfect, giving a brilliant image and great covering power.

TURNER-REICH Anastigmat Lenses meet every requirement and compare favorably in price with other lenses of less capacity.

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to portrait work when your skill can be applied with equal profit to commercial photography.

The rapidly growing use of photographs in the promotion and development of all business is making this a large and profitable branch of your profession.

Correct illumination—the main requisite for success in this work—is easily accomplished with

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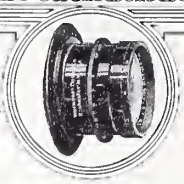

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Its speed-corrections-compactness and versatility make it a valuable asset to any photographic equipment.

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WOLLENSAK OPTICAL COMPANY
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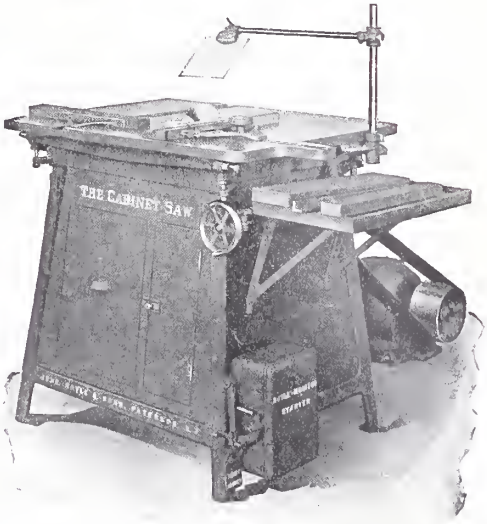
THE PHOTO-ENGRAVING DEPARTMENT



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Let us suggest an outfit. Write for printed matter.

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AUTOCHROM PLATES

For Direct Color Photography

Any amateur, with an ordinary camera and no extra equipment except a special yellow ray filter can obtain pictures in colors true to nature.

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INTENSIVE PLATES?

(Over-Exposure Proof)

Can be developed with the regular developers.

A trial dozen sent on receipt of standard list price.

Circular on Request

R. J. FITZSIMONS

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Over 1,000,000 Candle Power

AN amount equal to fifteen skylights, fifty arcs, five hundred 1000-watt mazdas, or about five hundred mercury tubes.

This little giant stands ready to deliver this tremendous volume of light at all times and in all places on sixty-five grains of powder.

From five to fifteen grains is the amount required for average portrait exposures.

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The quality of this light has been proven by prize-winning results.

Send at once for folder **"Do You Understand Flashlight?"** and illustrated reprint—both free.

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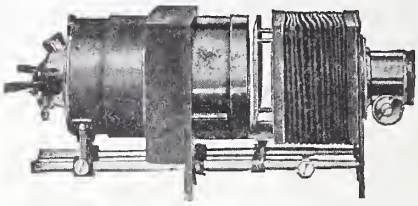

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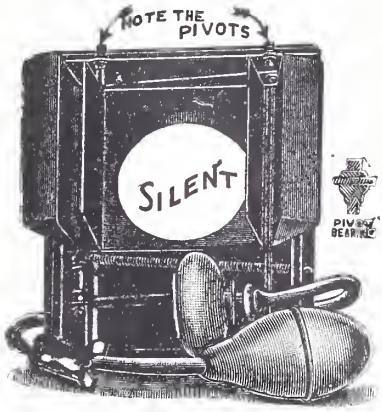

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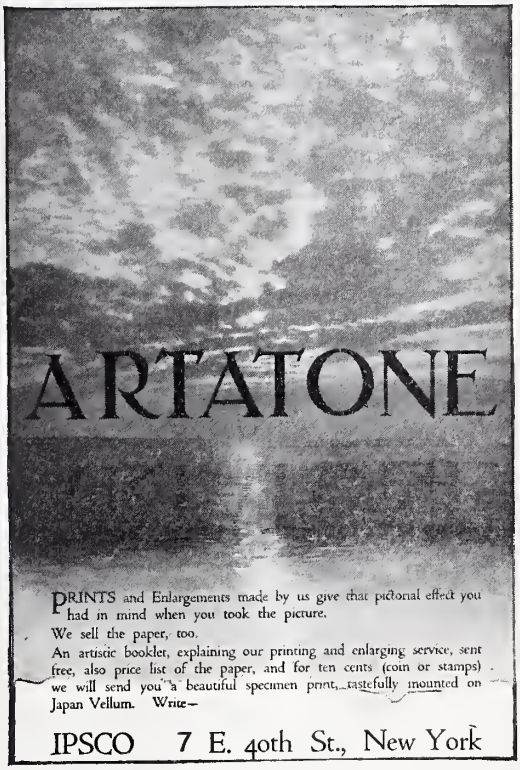

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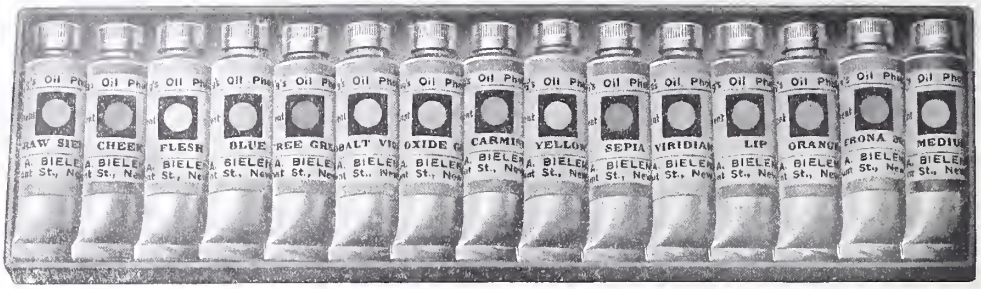

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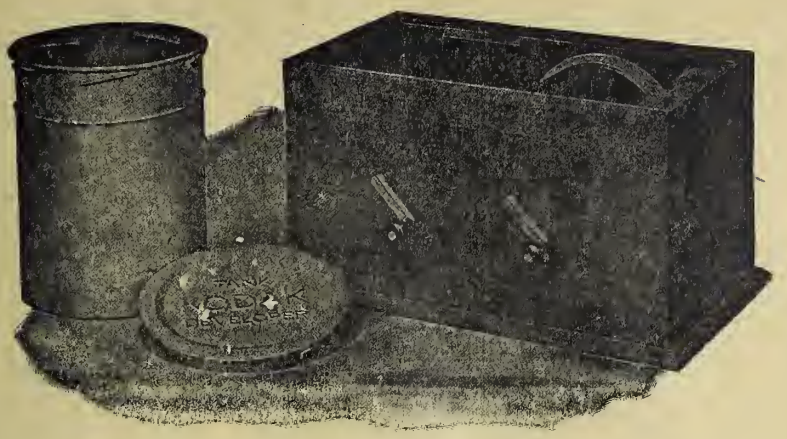

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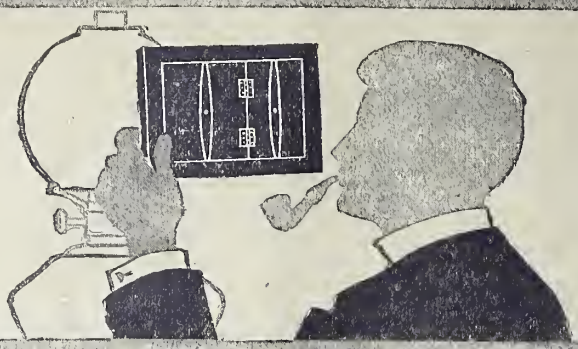

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